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ORIGINAL ARTICLES.

SELECTED CASES OF SARCOMA OF BONE AFFECTING THE LOWER EXTREMITIES.[1]

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THIS subject is fraught with great interest on account of the meagre knowledge which we possess, and of great importance owing to the fact of the terrible mortality which attends the disease. Sarcoma of bone inevitably terminates in death, and its early recognition and its complete removal are subjects which are worthy the profound study of the surgeon. I believe that sarcoma, in the large majority of cases, is a disease more deadly in its nature than any other variety of malignant tumor. Its unprecedented rapidity of growth, its widespread metastases, its insidious development from unknown causes, its uncertainty of early diagnosis, its absolute certainty to kill, make this disease a subject of paramount importance.

The appalling impressions which I have received from a large clinical experience with this dreadful malady lead me to regard this neoplasm as one to which the thoughtful attention of the surgeon should be assiduously directed.

Entertaining these views, as I do, not from hearsay, nor from book-knowledge, nor from a narration of recorded cases by others, but from actual clinical experience with the disease, I know of no subject to which I could invite attention that concerns us more than this.

In studying the subject there have arisen a number of important questions which I shall introduce, with a view to elicit discussion upon these points. It is in this way, by accumulative investigation, and by comparison, that the surgical profession can acquire knowledge upon such diseases. The malignancy, the etiology, the clinical history, the prognosis, the diagnosis, and the treatment, besides other important subjects in regard to tumors, can only be understood by an exhaustive study of a number of individual cases. The consideration of a typical case of sarcoma of bone, for example, affords no reliable knowledge which could be applied to another case of sarcoma of bone. This variety of malignant tumor of bone has a wide range of difference, and it is only by comparison that we can arrive at any satisfactory knowledge.

Before taking up a study of individual cases, a few remarks upon the general subject of sarcoma in relation to its definition, its origin, its situation, its etiology and its classification seem pertinent.

The first question which naturally suggests itself is, What is sarcoma?

Sarcoma is a tumor; and a tumor, according to Virchow, is "a circumscribed new formation of tissue." All tumors are divided into three groups:

I. *Histoid tumors*, which are composed of some one of the many forms of connective tissue. They are derived from the middle blastodermic layer of the fœtus. Lipoma is a typical example.

II. *Organoid tumors*, which are composed of several of the normal tissues of the body, and these tissues stand in relation to each other as in the organ. They are derived from the middle blastodermic layer also, with some elements derived from the internal or external blastodermic layer of the fœtus. Adenoma is a typical example.

III. *Cellular tumors*, which are composed of tissues differing from the normal tissues of the human body in the extreme abundance of the cells. They are derived from any of the three blastodermic membranes of the fœtus. There are only three tumors belonging to this group, viz., carcinoma, sarcoma, and granuloma. It is thus evident that *sarcoma* is a tumor which is composed of tissue cells which normally belong to the human body, and that only extreme proliferation of normal connective-tissue cells is necessary to produce a sarcoma. It is, therefore, a growth of no foreign tissue, and the only difference between normal connective tissue and sarcoma lies in the extreme and rich abundance of the cells. The general impression that in malignant tumors there are new structural elements is incorrect, for cancer as well as sarcoma and granuloma, as also all other tumors, is simply the result of excess in growth of normal tissue, or else the presence of normal embryonal tissue in places where that tissue does not physiologically belong.

In the three germinal layers: 1st, the epiblast, from which skin develops; 2d, the mesoblast, from which distinct organs and systems of organs develop; 3d, the hypoblast, from which mucous membrane and glandular organs develop, there is found a key to a solution of the origin of these malignant and benignant growths. A careful study of the situation of tumors in the body demonstrates the fact that

[1] Read before the New York County Medical Association, Dec. 19, 1887.

tumors are found, as a rule, in parts of the body where in the fœtus the cell growth is complicated, as, for example, at the junction of the skin and mucous membrane. Here there is found a union of the tissues derived from the epiblast, the mesoblast, and the hypoblast. Cancer of the lip is a good illustration of this law. Tumors also develop at points where there is constant irritation or mechanical activity; an illustration of this law is found in malignant disease affecting the lips, the pylorus, the cæcum, the rectum, or the testicle when it remains in the inguinal canal. Tumors again develop in special organs which are the seat of physiological activity, as, for example, the breast, the uterus, the testicle, and the parotid.

From such observations a fair inference can be drawn as to the etiology of malignant and benignant growths. The composition of these growths has already been shown to be of no new structural elements, but of perfectly normal elements and cells of which the human body is composed, only those cells are found in places where they do not belong, and where there is great mechanical or physiological activity. Might not the mere transposition of the cells in the embryo from places where they normally belong to places where they are foreign, associated with the fact that just these places where tumors grow are precisely those places where there is a union of the different germinal layers in the embryo, explain the etiology of tumors? The question of traumatism in developing tumors can be reconciled with Cohnheim's theory of modern pathology; because it is traumatism, perhaps, more than any other agency that produces proliferation in cell growth. The traumatism in itself may not be capable of even producing a malignant tumor; but traumatism in places where a transposition of cells in the embryo has already occurred might act as a predisposing cause to the development of malignant tumors.

With reference to the subject of a special bacillus to explain the presence of a sarcoma, for example, little can be said at the present time. That such an hypothesis may be true is still *sub judice*, and until we are possessed of more reliable knowledge upon this subject, based upon experimental work, the question cannot be said to be settled. In the light of our present knowledge of the etiology of suppuration it is not at all unlikely that in the near future this theory may be proved. However this may be, the law of the transposition of cells, and their proliferation by traumatism would in no wise affect the present state of the subject.

These remarks seem pertinent in order to bring out clearly the place which sarcoma has among the group of tumors. The digression also serves to explain some points in reference to the relation of traumatism to malignant tumors. It is to sarcoma in particular that traumatism seems to act as an exciting cause, and in the cases reported I shall call attention to this fact in connection with some striking examples of sarcoma following rapidly upon traumatism.

Sarcoma has been classified by Virchow in a way that is generally accepted by surgeons and pathologists. It is the best classification in use and with but a slight modification I shall employ it upon the present occasion. Sarcoma may be divided: 1st, *according to the character of the cells:*

1. Spindle-cell sarcoma (like ordinary connective-tissue cells).
2. Round-cell sarcoma (similar in form to leucocytes).
3. Giant cell sarcoma (such as are seen in medulla of bone).
4. Mixed cell sarcoma (composed of some or all of the above variety of cells).

and 2d, *according to the character of the connective substance.*

1. Connective tissue.
2. Gelatinous tissue.
3. Fatty tissue.
4. Cartilaginous tissue.
5. Osseous tissue.

Hence a sarcoma is named according to the variety of connective tissue substance of which it is composed together with ordinary connective-tissue cells.

Thus, for example, if gelatinous tissue is connected with pure connective tissue cells a myxo-sarcoma is developed. I have a beautiful illustration of a myxo-sarcoma growing upon the leg of a patient upon whom I expect to operate. If fatty connective tissue is in combination with ordinary connective-tissue cells, a lipo-sarcoma is developed, of which also I have a typical specimen.

Occasionally a sarcoma is composed of many forms of connective-tissue substance, and it is then termed a mixed sarcoma. This form must not be mistaken for a mixed cell, which differs from a mixed sarcoma in the way already mentioned.

In discussing sarcoma limited to the long bones a very simple classification can be made upon a pathological basis, viz.:

I. Subperiosteal sarcoma.

II. Central sarcoma.

The *clinical history* of sarcoma is an interesting feature of the disease. It is the malignant disease of early childhood, and has been seen in an infant under one year. As a rule, it is a tumor which develops suddenly and which runs oftentimes a rapidly fatal course. In two cases only have I seen the tumor grow slowly. Sarcoma of bone is usually a nodular, painful, rapidly growing neoplasm which in the later stages begins to ulcerate. If it grows from the subperiosteal tissue it is found to affect the shaft of the bone; is not distinctly circumscribed, grows very rapidly, and is not associated with inflam-

matory processes. If the sarcoma grows from the centre of the bone it usually affects the extremities of the bones instead of the shaft; it is a distinctly circumscribed neoplasm instead of a diffuse swelling, and grows slowly, which is in marked contrast to the subperiosteal variety. The slow growth is due to the fact that absorption of bone must take place by pressure of the tumor. This pressure causes atrophy of bone, and this process is necessarily slow. The central sarcoma has an egg-shell crepitation in the later stages of the disease. This crepitation is due to the breaking of the attenuated and fragile shell of bone which has been pushed out by the growth from within, and is a pathognomonic symptom of central sarcoma.

The malignancy of sarcoma is manifested by its widespread metastases, by its complete annihilation of adjoining tissue, by pressure effects, and by hemorrhages due to ulceration, by its infiltration through bloodvessels in the majority of cases, and, finally, by its rapid strides toward a fatal termination unless interrupted by a radical operation.

The *diagnosis* of sarcoma in its early stages is often very difficult. The microscope only can decide in some cases. Time, which might afford definite information, cannot be utilized for the purpose of diagnosis. Procrastination in coming to a decision is too dangerous an agency to employ to settle such a momentous question. The use of the harpoon will throw intelligent light upon this doubtful and grave question, and settle beyond all peradventure the malignancy of the growth.

Great care should also be exercised in not making undue haste in coming to a conclusion as to the question of a growth being sarcomatous. I have had three cases sent to me for the purpose of amputation on account of sarcoma. Each of these three cases proved to be a chronic inflammation of bone, and each was completely cured without amputation.

One of these cases was of the thigh, the other two cases were of the tibia, and all three cases had consulted surgeons, who pronounced the neoplasms malignant and advised amputation.

The points of differential diagnosis between sarcoma of bone on the one hand, and chronic inflammation of bone on the other hand, are as follows:

SARCOMA OF BONE.	CHRONIC INFLAMMATION OF BONE.
1. Attacks extremities unless subperiosteal.	1. Attacks the shaft.
2. Forms soft swelling in comparison with sclerosis of bone.	2. Forms hard smooth bone.
3. Rapid in its course.	3. Slow in its course.
4. Distended veins over the surface of tumor.	4. No distended veins over surface as in sarcoma.
5. Does not invade joint.	5. Usually invades the neighboring joint.
6. Circumscribed areas of fluctuation over swelling where cysts filled with bloody serum are found.	6. There may be diffuse area of fluctuation; but pus is found instead of bloody serum.

Another very important differential diagnosis must be made between sarcoma and carcinoma.

SARCOMA.	CARCINOMA.
1. Origin of growth is from the mesoblast.	1. Origin of growth is from mesoblast and also from hypo- or epiblast.
2. Disseminates by bloodvessels.	2. Disseminates by the lymphatic channels.
3. Tumor may be enclosed in a capsule.	3. Tumor is never enclosed in a capsule.
4. Cachexia appears late in the history of the tumor.	4. Cachexia appears early in the history of the growth.
5. Disease of early life or middle life.	5. Disease late in life as a rule.
6. Not so painful a tumor as carcinoma, and may develop with little or no pain.	6. Sharp, lancinating pains as a rule.

The *prognosis* in sarcoma is as gloomy as can be imagined. It is a disease which destroys life rapidly, unless arrested by amputation. The prognosis may be modified as regards time by the situation and the particular cell variety of the sarcoma. In whatever way we look at the prognosis it is serious. On the other hand a radical amputation may rescue a patient's life even in the cases of the most malignant variety. I shall furnish examples of this fact in the list of the cases that I have operated upon within the past few years.

The *treatment* of sarcoma of the long bones is simple, because there is but one operation, and that is amputation. From an experience derived from a number of these cases of sarcoma of bone, and from opinions formed after careful study of the cases of others, I am more and more impressed with the fact that amputation is the only operation which should be contemplated. I refer to sarcomata of the long bones. The operation of exsection or enucleation, and an application of caustics are, in my humble judgment, productive of harm; because the disease is not as a rule radically removed by these methods, and oftentimes the tumor returns very rapidly, and the operation seemed only to add fuel to the fire.

I believe that in all cases of sarcoma of the long bones amputation should be decided upon at the earliest period possible, and the operation performed without delay. At the point of election I would suggest an amputation which would remove the entire bone affected, whether it is a subperiosteal or central sarcoma. This necessitates an amputation of the lower part of the thigh in case the tibia or fibula is the seat of the neoplasm. It necessitates an amputation of the hip-joint when the tumor is subpericsteal, and involves the shaft of the femur. In view of the great mortality of hip-joint amputation, a possible exception might be made in case of a central sarcoma of the condyle of the femur which was recognized early, and which was small in size. By amputation in the lower third of the femur in sarcoma of one of the bones of the legs, the popliteal glands are thus removed, and while this point would con-

cern us more if the disease were cancer, yet I have seen a case of sarcoma affecting those glands.

The remedy of amputation which is suggested, is a severe one; but the disease for which the amputation is performed is a uniformly fatal one if left to nature, and in view of the great malignancy of sarcoma, I believe the operation should be the most radical one consistent with a due regard for the life of the patient during the immediate performance of the operation. It must be remembered that the patient is suffering from a uniformly fatal disease, and the chances of escape from it are in proportion, within proper limits of course, to the distance at which the limb is removed from the seat of the malignant tumor.

In offering a succinct report of a few of my cases of sarcoma of the long bones of the lower extremities, I shall endeavor to dwell upon the particular features of each case, and then in conclusion deduct some inferences which the study of these cases collectively seems to warrant. In the data which I shall give in the final conclusion I shall avail myself only of those cases which I have had under treatment. At some future time I intend to tabulate my cases of sarcoma of the long bones of the upper extremities, and upon another to group the cases of sarcoma of the skull and pelvis. I have carefully prepared notes of upward of fifty cases of sarcoma, of which number thirteen belong to the lower extremities. It is to a study of this group that I shall now invite your attention. Only those where the diagnosis was confirmed by the microscope will be considered.

I have had a number of cases where the sarcoma has affected the lower extremities; but where the starting-point was not from the periosteum or bone. This separate group, which forms a collection of great interest, I shall not embrace in the present paper. These sarcomata grew from fascia and lymphatics, and from the intermuscular septa, and from pigmented moles, which I believe are dangerous to leave upon the body, because they may become the starting points for sarcomatous ulcers. I shall also exclude from the present group cases of sarcoma developed from a retained testicle in the inguinal canal, and shall refer only to sarcomata having their origin from bone or periosteum.

CASE I. *Subperiosteal sarcoma of femur; amputation at hip-joint; death.* (Examined by Dr. Biggs.)—J. T., æt. thirty-six, admitted to St. Vincent's Hospital May, 1884. He was sent to me by Dr. W. H. Robb, of Amsterdam, N. Y. August, 1883, patient was thrown from the end of a railroad platform-car, his left leg being caught in an iron upright, by which he was held suspended until released by some bystanders. Dr. Robb saw him at once, and found a transverse fracture of the thigh just above the knee-joint. The fracture was dressed in the usual manner with long side-splints and the weight and pulley. At the expiration of one month Dr. Robb found no union of the bone, and applied a plaster-of-Paris bandage. At the end of a fortnight the plaster was cut down, and still no union of the fracture. At the time of this dressing there was noticed a change in the circulation about the seat of the fracture; and this was supposed by the attendants to be a good omen, because it indicated that nature was making an effort to throw out bony callus. Another plaster-of-Paris bandage was applied for a fortnight, and then this dressing was removed. There was now noticed at the seat of the fracture a decided increase in the size of the limb, and there was no attempt at union. The plaster was now discontinued, and a splint was made of leather to support the ununited fracture. The patient was sent to me. The diagnosis of malignant disease which was made by Dr. Robb was confirmed, and notwithstanding the fact of the nature of the tumor, the patient refused to have his thigh amputated. He remained several months in St. Vincent's Hospital, during which time there were periods when the tumor seemed less painful and diminished in size, especially after the bloody serum was withdrawn by the aspirator.

In July the patient not only gave his consent to an amputation, but desired it in view of the unmistakable diagnosis of malignant disease. The tumor now had become enormous in size, and the patient's strength was very much reduced by repeated secondary hemorrhages. The tumor was also ulcerating and the discharges very foul. The amputation was performed in a little less than one year from the time of the original injury. The operation was not successful, and the patient sank rapidly, and died in a few hours.

Remarks.—The interesting features connected with this case are, 1. The relation of traumatism to the development of sarcoma. 2. The fact of the development of sarcoma from a traumatism of bone resulting in a fracture, and that the seat of fracture was the starting-point of the disease. 3. The probable chances of success if the patient had consented to amputation as soon as the diagnosis was made positive. 4. The rapidity of the growth in a few months.

CASE II. *Subperiosteal mixed-cell sarcoma of femur; amputation at hip-joint; recovery.* (Examined by Dr. Grauer.)—W. R., æt. seventeen, admitted to Harlem Hospital May 19, 1887. Patient sent by Dr. Johnson, of Blairstown, N. J. In January, 1887, the patient felt a dull, aching pain in the left thigh, the pain increasing at night. Shortly after the onset of the pain, a swelling appeared, which rapidly increased in size. Three months later the patient consulted a physician, who aspirated the swelling, and drew off several ounces of bloody fluid. In May, 1887, about five months from the first appearance of the pain, and three months from the beginning of the swelling, he was sent to me. His condition at this time was very unfavorable. From a strong, healthy boy in a few months he became feeble, weak, and cachectic. In a few weeks he lost upward of forty-five pounds. The family history as regards hereditary influence is negative. The urine

was normal. The tumor measured twenty-nine inches in circumference. On May 26, 1887, five months from the date of the appearance of the first signs and symptoms of the tumor, I performed amputation at the hip-joint. The hemorrhage was controlled by a simple elastic band, as suggested by Lloyd, of Birmingham, and applied by Dr. Garmany. The patient rallied from the shock, and made a good recovery, debarring a secondary hemorrhage, which occurred on the twenty-ninth day following the operation. The hemorrhage came from the artery which accompanied the ligamentum teres, and this hemorrhage, it is interesting to note, was caused by sloughing of the ligamentum teres, which was not cut off close to the bottom of the acetabulum, but instead was cut off close to the head of the femur: as a result, the ligamentum teres sloughed, and the hemorrhage occurred.

It is a point worthy of attention to cut this ligament close to the femur, and thus avoid this accident. The simple band, as applied, completely controls all hemorrhage, except from the obturator artery, which cannot be compressed, owing to its passage through the obturator foramen. If this fact is known, the surgeon can at once seize this artery, and then all bleeding is completely arrested until the other vessels are ligated. The patient is now in Bellevue Hospital, and there is no evidence of any return of the disease.

Remarks.—The chief points of interest in this case are, 1, the rapidity of this growth. There were only five months intervening between the onset of the first symptoms and the time of the operation. 2, the simple and efficacious method of arresting the hemorrhage. 3, the gloomy outlook for the patient, though he recovered from the operation.

In thirty-six cases of subperiosteal sarcoma of the femur, reported by Butlin, there was a death-rate of twenty-five per cent. in operations for removal of the disease. Out of the thirty-six cases only one could be said to have been completely cured by the operation, and about this one case there seems to be a doubt as to whether it was not a central sarcoma. The period of three years is taken as the shortest possible time which must elapse before a patient can be said to be cured. The prognosis is, therefore, very serious—for there is not a single case recorded in this list of subperiosteal sarcomata of the femur that was cured. This is most certainly a startling fact in connection with a study of these cases.

CASE III. *Subperiosteal sarcoma of fibula (round-cell variety).* (Examined by Dr. Grauer.)—J. H., æt. four. Family history is negative. Patient received an injury to the fibula, February, 1881, and shortly after this injury a small swelling began, which grew rapidly, until at the end of six months the lump became very painful, and the patient was unable to walk. On May 8, 1882, I amputated the limb just above the knee-joint. The tumor was examined microscopically, and pronounced to be a round-celled sarcoma. The boy rapidly improved in his general condition, and has been perfectly healthy ever since the operation, with no evidence at any time of a return of the disease. It is now nearly five years since the amputation, and a long enough time has elapsed to make it certain that no return of the disease will ever occur.

Remarks.—This case is interesting from several points of view. 1. The relation between traumatism and the development of sarcoma is demonstrated in this case. 2. The slowness of the growth in subperiosteal sarcoma. 3. The complete recovery, with no return of the tumor, notwithstanding the fact that the microscopical examination revealed the presence of the most malignant variety of sarcoma. 4. The encouragement to operate in these desperate cases, though the prognosis seems absolutely fatal at the time.

CASE IV. *Subperiosteal sarcoma of tibia.*—T. M., æt. seventeen. Family history is negative. Patient previous to April, 1884, enjoyed excellent health. In April, 1884, he struck his knee against a coal car. The injury was apparently slight. A small lump was formed, which soon grew painful. Patient consulted Dr. R. H. Gibbons, of Pittston. He diagnosticated sarcoma, and advised removal of the limb. Patient would not at that time consent to any operation. He was sent by Dr. Gibbons to me in August, 1884, about five months from the date of the injury. I advised immediate amputation, to which proposition he dissented. Upon return to Pittston in the latter part of August, he allowed Dr. Gibbons to try to enucleate the tumor, but would not consent to an amputation. In about three weeks after the operation, the tumor returned, and grew very rapidly until November 16, 1884, when he requested his leg to be amputated. At this late date, patient had become too weak, and finally died December 4, 1884, without an amputation, about nine months from the time of the injury.

Remarks—A piece of this tumor was examined microscopically and pronounced to be a subperiosteal sarcoma involving the upper end of the tibia. The chief points of interest in this case are: 1. The sarcoma following directly upon receipt of traumatism. 2. The rapid course of the disease. 3. The consequences of refusal to an amputation in face of a positive diagnosis of malignant disease. 4. The rapid return after enucleation.

CASE V. *Subperiosteal sarcoma of tibia, mixed sarcoma, consisting of a variety of connective tissue substance.* (Examined by Dr. Biggs.)—Mrs. B., æt. nineteen, was admitted to Bellevue Hospital October 1, 1885. Patient has always enjoyed good health. Nine months previous to October, 1885, patient felt a sharp pain in left leg just above the ankle. The pain lasted but a few seconds and then disappeared. There were occasional shooting pains in the leg until three months later, when severe cramps occurred. The foot became slightly œdematous and the swelling involved the leg. Patient at

this time was six months pregnant, and the swelling and pain now disappeared until the child was born. Shortly after parturition the swelling and pain returned and the tumor grew very rapidly.

In September, 1885, the patient was sent to me by Dr. Anderton, who made the diagnosis of sarcoma of the tibia, in which I concurred, and at the same time advised immediate amputation. On October 3, 1885, about nine months from the time of the first appearances of pain and swelling I performed a supracondyloid amputation of the thigh. Patient rallied from the operation and the wound healed by primary intention.

On April 17, 1886, seven months after amputation of the thigh a tumor developed upon the lower jaw. I removed this tumor at St. Vincent's Hospital. The tumor was sarcoma and appeared three months previous.

In March 23, 1886, patient returned to St. Vincent's Hospital with a tumor situated upon the upper jaw. This appeared a few weeks previous and grew very rapidly after the operation upon the lower jaw. In May, 1886, the clavicle became involved and then the lungs, and on May 11th the patient died.

Remarks.—The points of interest in this case are: 1. The rapidity of the growth of the tumor, as well as the multiple return of it, in which the metastases occurred in the bones, but finally in the lungs, which were examined by Professor Janeway. 2. The absence of any return of the disease in those places where an operation was performed. 3. The temporary arrest of the growth for several months during the period of pregnancy, and its very rapid growth immediately after parturition. This same phenomenon I have seen in a case of sarcoma of the breast. The growth was arrested during pregnancy; but grew rapidly immediately after parturition. The pregnant state seems to hold in temporary abeyance the growth of malignant tumors; but after this condition is removed, the growth takes place with great rapidity. 4. The medico-legal controversy which grew out of the treatment of this case—I refer to this point on account of the importance of the subject.

After the amputation was performed, the husband of the patient began a suit for $20,000 against me for amputating the leg on the ground that the tumor could have been removed and the limb saved. Notwithstanding free permission from the patient, as well as from the husband, to do as I thought best in the operation after cutting first into the growth and thereby giving her the benefit of the doubt, I was confronted with this dilemma. It is needless to state that the suit was never brought to trial. The full, verbal permission to amputate and the microscopical evidences of sarcoma, and the rapid return after a few weeks were all questions of great importance from a medico-legal aspect. The husband made some serious threats of a violent nature; but the sudden return of the disease, and the great suffering of his wife induced him to come back for further advice. I consented to operate on the upper jaw and afterward to operate upon the lower jaw, at the urgent request of the husband, whom I compelled to make his application in writing with full permission to operate as I thought best.

There is so much ignorance among the less educated upon the nature of the malignancy of certain tumors, and so great a natural antipathy to amputation for the relief of these tumors, that a surgeon, in order to protect himself, should refuse to have anything to do with uneducated patients unless he has obtained their permission in writing. A surgeon cannot otherwise protect himself against the unprincipled lawyer who plays upon the feelings and sentiment of his clients with visions of a large sum of money for supposed malpractice.

CASE VI. *Subperiosteal sarcoma of tibia.*—W. R., æt. forty, admitted May, 1886, to Bellevue Hospital. Patient's family history negative. Two years and a half previous to his admittance he noticed a lump or swelling upon the internal malleolus of the left leg. There was no history of injury. The growth of the tumor was slow, so slow that he was, during all of this time, able to wear a shoe so constructed as to fit the slowly changing shape of his foot, which had the appearance of an aggravated talipes valgus. The urine contained considerable albumen, and a few granular and hyaline casts. He had been addicted to a free use of stimulants for many years. Diagnosis of *sarcoma* of tibia was made by Professor Sayre as soon as he examined the patient, and he sent him to me for operation, as I was on duty at the hospital at the time. It was deemed best to amputate the leg for the relief of the sarcoma, although the condition of his kidneys was known at the time of this decision. I performed the circular amputation, and the stump at the first dressing appeared in excellent condition, save a little bichloride irritation. He developed delirium tremens, and, with the kidney complication and exhaustion, died in ten days following the operation. The microscopical examination confirmed Dr. Sayre's diagnosis of sarcoma.

Remarks.—The points of interest in this case are: 1. The slow growth of this subperiosteal sarcoma, and in this respect in marked contrast to the other subperiosteal sarcomata. 2. The absence of pain. 3. The cause of death which was due to delirium tremens and uræmia, and not directly to the operation. 4. The difficulty of diagnosis in the early stages.

I have now two cases where sarcomata are present, but where the growths have occupied two years in developing, and on which account both of these patients refuse to have any operation performed. These patients are still alive, and although the disease in each case is progressing slowly, and the diagnosis seemed at first obscure, these tumors, without doubt, will suddenly grow rapidly at no distant date. These two cases present very unusual phenomena in regard to the growth of sarcoma.

CASE VII. *Central sarcoma of tibia, mixed, containing many different varieties of connective tissue.* (Examined by Dr. Biggs.)—J. F., æt. nine. In April, 1887, was struck on the lower end of the leg. Previous to this he had always been well. Following the blow a small swelling appeared upon the front and lower part of the leg. The lump grew rapidly, and he began to walk upon his toes. Four months after the above-mentioned injury the patient was brought to me. The skin over the tumor was healthy, and the swelling was about the size of an egg. There was a suspicion of an abscess in the bone. The parents consented to an exploratory operation, but would not consent to an amputation in case the exploration revealed the presence of sarcoma. The tumor was scooped out and the wound for a short time did well. He was removed from the hospital September 28, 1887, and taken home.

In November, 1887, he was brought back to St. Vincent's Hospital. The tumor was now as large as an orange, and presented the cauliflower excrescence so characteristic of these malignant growths in the later stages. The mother now consented to amputation; but made the proviso that the amputation should be below the knee. Accordingly, I performed the amputation on November 31, 1887. The Esmarch bandage was applied; but it was employed above the tumor, as it should be in cases of malignant tumors. A sarcoma should never be compressed.

Remarks.—The chief points of interest are: 1. The relation of traumatism to the genesis of malignant tumors. 2. The rapidity of the growth for a central sarcoma. 3. The impropriety of any exploratory operation. 4. The necessity of an amputation as early as the disease is recognized. 5. The necessity of full permission to amputate in case an exploratory operation is deemed necessary for the purpose of a diagnosis. 6. The presence of egg-shell crepitation, indicating the central origin of the tumor in contradistinction to the subperiosteal variety. 7. The encouraging outlook for this boy in contrast with the boy who had a subperiosteal sarcoma of the thigh. In twenty-nine cases of central sarcoma of the leg reported by Butlin, there was a death-rate of nearly thirty per cent. in the operation for removal of the disease. Out of the twenty-nine cases one patient only could be said to have been completely cured, taking three years as the standard of time. This high rate of mortality in the operation itself is a most astonishing fact, and is only surpassed by one still more startling, that out of this original list of twenty-nine cases only one single case was reported as having been completely cured.

CASE VIII. *Myxo-sarcoma of tibia.* (Examined by Dr. Biggs.)—T. W. æt. thirty-nine, admitted to Bellevue Hospital October 22, 1887. Family history of no special importance. In September, 1887, patient was admitted to the medical ward of Bellevue Hospital on account of chills, pains in head, chest, and back, and a swelling upon the left leg at the seat of an old fracture. He also had purpura hemorrhagica over his legs, thighs, and abdomen. October 22, 1887, he had nearly complete suppression of urine with a large quantity of albumen and casts. His general condition was improved, and on Nov. 4, 1887, he was transferred to the third surgical division. I made a diagnosis of sarcoma, and this diagnosis was confirmed by Dr. Biggs, who found a myxoma in the fungoid growth, and the tumor had caused a pathological fracture. Patient was given special diet, and tonics, with a view to improving his general condition preparatory to an amputation. His appetite increased, there was only a small amount of albumen in his urine, and the prospects of a successful operation for the removal of his malignant tumor seemed encouraging. He was induced, however, to leave the hospital, to have caustics applied, and would not consent to an operation.

Remarks.—The points of interest are: 1. The development of a malignant tumor at the seat of an old fracture. This same phenomenon I have seen in a number of cases. In one case a child fell upon the back of the head and a sarcoma developed over the seat of a fracture of the occipital bone beneath a large hæmatoma; in another case a sarcoma developed in the line of union of a simple linear fracture of the skull; in still another case after a fracture of the femur. This development of a malignant tumor at the seat of an old fracture is characteristic of sarcoma; because carcinoma never starts primarily in bone; but is always the result of a secondary metastasis. For example, I removed a carcinoma of the breast in a patient some years ago, and within a year from the time of the removal of the breast the same patient fractured her femur while turning over in bed. This specimen I have in my possession, and it forms a unique example of carcinoma in bone from secondary deposit. Epithelioma, however, may arise primarily in a sinus leading to necrosed bone, the result of a compound fracture. In this case the starting-point is not in bone; but in an epithelial-lined sinus with the accompanying irritation, all of which conditions are favorable to the development of this special type of malignant disease. I have one specimen of epithelioma affecting the femur, arising from a condition just described.

2. The second point of interest in this case is the manifestation of the feeling of antipathy to a cutting operation as contrasted with the treatment by caustics. It is precisely in these cases that the surgeon should try to overcome the natural prejudices to an operation; because tampering with caustics and plaster in these cases of sarcoma is never productive of good, but adds additional danger, and hastens the final end. Much encouragement can be given in these days to patients about to undergo the ordeal of a surgical operation, and the surgeon should avail

himself of these arguments to convince kindly and forcibly the patient of his or her error, and persuade these unfortunate and misdirected patients into an operation which is their only safety. In my experience I cannot recall a local recurrence of sarcoma after amputation. This is certainly a most important and encouraging sign, and this fact alone ought to impress upon the surgeon the great necessity of early operation. It ought also to afford a source of great consolation to a patient suffering from this malignant disease.

Finally, I trust that I have been sufficiently clear upon the following points:

1. The importance of early recognizing the disease and the necessity of complete removal of the limb by amputation without delay.

2. The importance of carefully watching the subsequent history of patients upon whom an operation has been performed for the removal of sarcoma.

3. The publication of all cases, whether the result of the amputation was favorable or otherwise, in order to enable surgeons to collect reliable and trustworthy data for future study.

4. The importance of a microscopical examination of every sarcoma. Surgeons are of one opinion upon this point, that a microscopical examination is a *sine qua non* to insure the tabulation of a case for purposes of study.

5. The importance of a radical operation in these cases of malignant sarcomata affecting the long bones of the extremities, and the condemnation of partial enucleations and the use of caustics and plasters.

6. The importance of encouragement to patients suffering from malignant disease of the long bones, on the ground that early and radical operations, even in the most malignant cases, may result in perfect cure.

REMOVAL OF THE UTERINE APPENDAGES FOR DISEASE IN WHICH PAIN IS A PROMINENT SYMPTOM.[1]

BY HOWARD A. KELLY, M.D.,
OF PHILADELPHIA.

THE following remarks are based upon my personal experience, and the results in cases, some of which have been traced for several years, and now may be referred to as permanently cured or improved. Only by *permanency* can any proper estimate be placed upon the value of reported results, and while successful cases are being reported in large numbers daily, within a few days or weeks of the operation, but little has been said of the conditions in which the patients found themselves after one, two, and three years.

[1] Read before the Philadelphia County Medical Society, December 28, 1887.

My opinion relative to the class of cases suitable for operation, to the results to be expected from operation, and as to the operation upon neurotic cases pure and simple, conforms closely to that expressed by Prof. Hegar in his monograph, *Der Zuzammenhang der Geschlechtskrankheiten mit Nervösen Leiden und die Castration bei Neurosen.* Nearly as I agree with Professor Hegar, I differ very widely from many other "authorities," so called, in this much-contested field. Still more widely do I differ from many views which have gained currency in the profession at large, as to the indications for and against operation, the certainty and the permanency and the value of the results obtained.

The convenience of assuming the symptom *pain* as a characteristic factor of the group of heterogeneous cases we are about to consider is at once evident. With this symptom patients usually apply and ask for nothing than that their *pain* be relieved, and under present modes of treatment and indifferent specialization in medicine, in cases even of marked disease of a minor character, the patient often goes through a protracted course of treatment in which nothing is distinct outside of the subjective elements of the case. Pain alone drives most patients to consent to adopt whatever means the surgeon may propose as remedial. By thus emphasizing this subjective feature, and also by the natural history of the diseases, we exclude all those cases from our study in which *size* is a characteristic.

We have left then a great group of mixed pelvic diseases less in size but not in the elements of danger, causing more suffering, with greater certainty undermining the health, and in no sense less important than the large fibroid, dermoid, or ovarian cystoma, unless we measure disease by the tape-measure. "What the eye sees not the heart grieves not," is true of those who find it so difficult to realize the great hourly danger in which their patients may be living, in whom nothing may be apparent to the eye, and but little to an unpractised touch.

Common among the diseases referred to are:

Ovaries enlarged by cirrhosis.

Ovaries with extensive follicular degeneration.

Hemorrhagic ovaries.

Ovaries containing pus sacs.

Neuralgic ovaries.

Ovaries involved in a withering of the pelvic peritoneum with the tubes.

Tubo-ovarian disease with coexisting hydro-, pyo-, or hæmato-salpinx, these three names, however, signifying not the disease itself but an accident of the disease, which may be absent and the disease still exist.

Pyosalpinx is a misnomer, as the disease may exist in all its essentials, and the tube contain no pus, but the ovary may be converted into a large

pus sac. In my experience, abscess of the ovary with a tube much thickened, gelatinous and friable on section, but containing no pus, is quite as frequent as a large tube sealed and distended with pus attached to a small ovary simply enveloped in inflammatory products. I believe that the entrance of the septic material into the ovary takes place through a ruptured follicle. In a case upon which I operated one year ago, my patient married a man suffering from gonorrhœa; she experienced no difficulty until the time of her first menstruation, when she was seized with violent pains, and remained an invalid ever after until I removed the mass.

Hydrosalpinx is more commonly associated with some mild non-septic pelvic inflammation which has resulted in sealing the fimbria, and hydrosalpinx results. It may, by distention of the tube, cause pain, but the morbid process usually long antedates the formation of any tumor. If this were not the case, the rational procedure would unquestionably be slitting open the tube on its dorsum, careful removal of the fluid, and an attempt to establish a pervious uterine opening by passing a small canula into the uterus, which could be removed later per vaginam. The disease, however, lies back of this, and the fluid formed is but one of its sequelæ. Here at once is a reason why operations upon tubes thus enlarged are not always and at once successful in curing the patient of all disability.

I am at present making daily visits to a patient operated upon in the Spring, from whom a large hydrosalpinx was removed, along with the ovaries and tube of the opposite side. Her uterus and structures lateral to it are now free from all sign of disease, but there still linger low down in the pelvis foci of inflammation in the cellular tissue, which, although objectively small, cause a disproportionate distress to the patient. The operation was here an imperatively necessary step, but still one step on the road to cure.

Hydrosalpinx is at times associated with anomalies in the development of the individual: thus I operated last week in Chicago on a married woman about thirty-eight, who had been a great sufferer ever since puberty. I found an infantile uterus, two very small, white ovaries, that on the left side being no larger than, and of the shape of, my thumb-nail, while vaulted over it was a large tube distended by several ounces of watery fluid. The indication in this case was not the size of the tube, but the establishment of the menopause to relieve painful ovulation. In pyosalpinx, on the other hand, the starting-point and focus of the disease are often the intensely poisonous contents of the tube, which involve surrounding structures by successive invasions; and here, were it practicable, the disease might often be cured by removing the tube alone, leaving the ovary; but of such a conservatism I do not approve, as the ovary without its duct is useless, even dangerous.

Of hæmatosalpinx I will not speak further than to say emphatically, that I do not believe that all these cases are extrauterine pregnancies, and to draw attention to the fact that the contents of the sac may be as acridly poisonous as that of pyosalpinx, and should receive the same extreme care in removal.

It would be better if *Pain*, per se, were never considered a sufficient indication for operation; or, at the worst, only those cases operated upon in which the most prolonged and painstaking care had failed to relieve, and where the intensity of the suffering must always seriously interfere with the capacity of the patient to enjoy life. We here meet the neurologist on common ground, and it would be better for all such cases if they first underwent a prolonged treatment at the hands of these specialists. A host of cases of neuralgic ovaries which have been sacrificed by the gynecologist would thus have been cured, and many cases which have been operated upon and not relieved would at least have been spared the ordeal of operation, and the too frequent reproach thus be spared the gynecologist, that he recommended the removal of a woman's ovaries, but she declined and a nerve specialist afterward cured her, and, to make the reflection worse, she has since borne a child.

I have a case in which a good friend considered removal of the ovaries would be necessary some two years ago, so great were the patient's sufferings, but with the gradual compensating hypertrophy of an insufficient mitrally diseased heart, she has improved and is now six months pregnant.

A prominent factor in causing this pelvic distress especially aggravated at the menstrual period, is, I am now convinced, large varicose veins in the broad ligaments. I think I can almost always recognize these cases now by the character of the pain, the face of the patient, and a peculiar sense of boggy fulness to the finger on vaginal examination. Constipation seems to be one factor in the causation, but while relieving constipation helps the condition, I have not found that it cures any case of long standing. Sequelæ of pregnancy may cause it. My experience as an operator leads me to reject removal of tubes and ovaries as in any way assisting a cure. In one case sent me by one of the most prominent neurologists in the country last spring, the patient is but little improved, although one of the veins tied and cut off was a half centimetre in diameter. As nothing else seems to do more than mitigate this condition, I propose yet to open the abdomen and simply tie the distended tortuous veins at either end, aspirating then, if necessary, and if the patient is no better she will at least be no worse off.

One class still remains, usually classed among the neuralgic cases, and this class Dr. S. Weir Mitchell

has happily defined, giving appropriate form to an idea which I have for some time entertained. They are those cases in which the expectancy and concentration of the attention on a normal function leads it to simulate disease in the expression of pain. These cases if operated upon rarely reflect credit upon the operator, and should ever be considered more in the province of the neurologist than of the gynecologist. I have never operated on a case of this sort, and never expect to.

We have here been speaking somewhat briefly of cases in which pain is the only local manifestation of disease. There is a small group of cases in which general nervous phenomena of an aggravated character seem after a time to subside into a local disease. I have in mind a case of salaam convulsions which lasted many months, was followed by severe neuralgic pains in various parts of the body, then by severe pelvic pains, and at the operation small cystic ovaries were discovered, and the patient promptly and completely cured by their removal. It is impossible, however, for any but a specialist to distinguish with certainty between those cases in which there are no manifest gross changes in these organs, and the cases about to be described, in which the trained touch can with certainty and exactitude determine the nature and extent of such changes. I know by my own progress in this matter how impossible it is for anything but the touch, which is daily exercising, improving, and correcting its inferences, to come to any definite conclusions in this matter, as to the size and position of the ovary and tube, whether cystic, how much enlarged, and if adherent; all these and other questions are but matters of daily practice for years to decide in all cases.

One of these cases I show you to-night (Mrs. J.) was treated by upward of thirty physicians, and had received almost as many differing opinions, no one recognizing the true nature of her disease, which I had the satisfaction of determining at once to be abscess of the ovary the instant my finger swept over the vault of the vagina. Another patient was treated for fourteen years, and her physician, recognizing some similar symptoms in a case upon which he saw me operating at my private hospital, sent her down to me, and she is now well. Here also I removed ovaries greatly enlarged by old encysted abscesses.

Briefly then, as to the status of this operation—the removal of *diseased* appendages, small in size, but in which pain is a prominent symptom—as a scientific operation.

1. It is scientific, because it deals with *diseased organs.*

2. It does more than almost any other single surgical procedure in relieving a large number of cases whose sufferings have been almost unbearable.

3. In *properly* selected cases the percentage of recoveries is over ninety-five per cent., and improving, and the percentage of cures equally large.

4. Unless we adopt the yardstick as our measure of disease, the indications for operative interference are often more urgent than in the case of most cystomata coming under our observation.

And lastly, all the steps of the operation, the technique of the procedure, have now been so widely appreciated, that it may be described as a *safe* operation.

In marked contrast to this statement might be cited the case of Sir Spencer Wells, in the days when this operation was in its infancy. We can here readily discover one reason why Sir Spencer has always been so bitterly opposed to operations of this class. He operated upon a woman fifty years of age, for the purpose of inducing the menopause. In opening the abdomen the intestine was cut, the ovaries were not completely removed, and the mesentery prolapsed from the wound, and a bad hernia followed. Such was the result of an imperfect technique in the hands of one who in the generation past did more for abdominal surgery than any other man of his time.

Of all questions relative to this work, that of *results* most nearly concerns us. As to the *immediate* result, life or death, I will speak of that under the title of danger of the operation. I refer here to the result relative to the *curing of the disease* in those cases which have recovered from operation. A satisfactory inquiry upon this heading will depend entirely upon the standard which we erect beforehand by which to test our results.

The brilliant results occasionally following this operation, and the many sanguine reports of operations in which the patients are reported to have been the most wretched of all sufferers, and by the abdominal section to have been at once and forever relieved from all pain, to have recovered health at once, and been able to return often to duties of a very laborious nature, have conspired to bring about such a state of professional opinion that cases which cannot show these results are thrown back upon the operator as failures.

There was at one time, when this operation was dangerous, some reason for this opprobrium, and the results gained were measured by the danger passed through, and often found inadequate, but with the great diminution of the danger the whole status of the question has altered. My own standard is this: Are the organs diseased? Will their removal cure the patient entirely, or will it relieve a large part of the suffering and at least make life more bearable. A result *absolutely* good is always to be desired; but a result *relatively* good is something to be very thankful for, and grasped in many cases. Not only the general profession but gynecologists themselves

are apt to place all hope upon the operation, like a throw of dice, and to forget that it is often more rational to handle the cases from the beginning of their treatment to the end, in such a manner that the operation is viewed by doctor and patient as simply a *step* in the treatment and progress toward cure.

Cases often require after-treatment, and some of my cases have only left me entirely well after weeks more of work. My operation removed, it is true, the focus of the disease, without which I could never have made any progress, but my after-treatment dealt with the disease products which may have been accumulating for years, the embers ever freshly kindling so long as the diseased tube and ovary remain, but now readily yielding to treatment. In other cases, I have been actually obliged to deal with disease of my own creating, for in three cases I have treated the women for cellulitic deposits formed, I believe, around the ligature at the stump.

Since my return from Europe on September 7th, I have operated upon fourteen cases of abdominal tumors, including hysterectomy and pyosalpinx. The last case is too recent to speak of, but not one of the others developed any fever after the operation, owing to my careful attention to the principles of antisepsis. A neglect of antiseptic precautions is criminal in any form of surgery. But this may be carried out with nothing but soap and water. The development of an antiseptic conscience is the chief point.

A simple transfixed ligature can readily rotate on its point of perforation, releasing the tissues and allowing secondary hemorrhage. To avoid the retraction of the tissues through the ligature, great care must be taken not to cut close to it. One serious error is cupping the stump, which should have an hour-glass form.

Dr. Dudley, of Chicago, uses a knot of his own invention, which I like best of all for most of these cases. It is made by entering the needle, with a double ligature, through the broad ligament, carrying it across, and reintroducing, bringing it out on the same side on which it entered. The needle is removed, and the loop carried over the whole mass to be tied off, and laid between the free ends of the ligature. This is grasped in the thumb and fingers, and drawn up tight; then one end is handed to an assistant, while the other is pulled tight, and next the other end treated in the same way, and in the same manner it is tied.

MEDICAL PROGRESS.

Antipyrin as a Uterine Sedative.—M. H. CHOUPPE has already called attention to the good effects of antipyrin in uterine pains after parturition or in dysmenorrhœa. In proof of this he relates the following case: A woman, aged thirty-five, was suffering from a large myoma situated in the posterior wall of the uterus, accompanied by copious hemorrhage, which reappeared after menstruation. Ergot checked the hemorrhage, but caused such severe uterine pains that it had to be discontinued. Large doses of morphine were administered; these caused the pains to disappear, but at the same time the uterine contraction was relaxed and hemorrhage reappeared. Ergot was again administered with similar results. The attacks of uterine pains lasted two or three hours. M. Chouppe then had recourse to antipyrin. An injection, containing thirty grains of antipyrin, was administered. At the end of twenty minutes the pains disappeared. M. Chouppe then tried the following experiment: An injection of antipyrin was given half an hour before the dose of ergot. The patient experienced no pain, although there was active uterine contraction; hemorrhage was arrested. M. Chouppe concludes that antipyrin relieves the pain caused by uterine contraction which is produced by ergot without diminishing the contraction. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament.—*British Medical Journal*, December 17, 1887.

Tuberculosis in Infants.—MANTEL, in *Le Progrès Médical* of December 10, 1887, concludes that tuberculosis in infants, as in adults, may be accompanied by intra- and extra-pulmonary hemorrhage; intra-pulmonary hemorrhage is more rare among infants than adults. Syphilis and engrafted tuberculosis are a frequent cause of hæmoptysis in infants; the peculiarities of their venous system furnishing an anatomical cause; the mechanism of the process is first the alteration in the child's blood, which causes frequent coagulation in the pulmonary arterioles; the destruction of lung tissue by tuberculosis, and the lessening of oxygenation of the blood; the influence of pleuritic adhesions, which frequently occur, and the pressure exercised by enlarged lymphatics in the mediastina, all conduce to thrombosis of the pulmonary artery, producing areas of passive congestion; syphilis weakens the vascular walls, and in these congested areas hemorrhages frequently occur. The lesions disclosed by post-mortem examination in these cases resemble those in the adult; two are especially interesting, one is the impossibility of discovering the exact source of the hemorrhage, and the other the constant presence of blood in the stomach, in various stages of coagulation, distending that viscus, and illustrating the especial mechanism of hæmoptysis among children. Premonitory and latent hemorrhage, dependent on conditions of the blood, occurs frequently; hemorrhage in any considerable amount is generally an indication of a serious and fatal condition.

The prognosis, in cases in which free hemorrhage occurs, is generally very grave; if syphilis can be discovered and promptly treated, either during or after intra-uterine life, much good may be done.

The Diagnosis of Gonorrhœa in Women.—NOEGGERATH, of Wiesbaden, concludes an article in the *Deutsche medicinische Wochenschrift* of December 8, 1887, with the following points, on which he bases his diagnosis of gonorrhœa:

1. The illness of a healthy woman occurring soon after marriage, although marriage often disturbs a woman's

health, but should not produce evident symptoms of disease.

2. A purulent discharge, in the absence of deep ulceration, granulation, sarcoma, carcinoma, or scanty, glassy-looking secretion, with small, deep red erosion on the os uteri.

3. Catarrh of the exits of the ducts from the vulvo-vaginal glands.

4. Small, pointed condylomata on different portions of the vulva.

5. A circle of such condylomata about the anus.

6. The presence of colpitis granulosa.

7. The existence of salpingo-perimetritis.

8. Ovaritis.

An Elixir of Saccharin.—MARTINDALE, in the *Pharmaceutical Journal*, proposes the following formula:

Saccharin.	24 grains.
Bicarbonate of sodium .	12 grains.
Alcohol	1 fluid-drachm.
Distilled water . . .	7 fluid-drachms.

The solution of the solids is made in water, the alcohol added, and the solution filtered. Twenty minims contain one grain of saccharin, and this is said to be sufficient to flavor a four ounce mixture.—*Pharmaceutical Record*, December, 1887.

Chloride of Drumine.—DR. REID, the introducer of this substance to the profession, reports, in the *Australasian Medical Gazette* for October, 1887, his use of drumine as follows:

A short time ago I had occasion to treat a severe case of sciatica. Having had a little drumine chloride on a filter paper I scraped it off, dissolved it in water, and then filtered it. I injected min. x of the solution, and in half an hour ʒj of solution (strength unknown, as the powder was mixed with filter paper, it was weak, but it paralyzed the sense of taste on the tongue). There was soon great relief, and ease of movement replaced the previous stiff back, so that the patient walked easily down stairs in an hour, when the jarring of ordinary walking formerly gave him much pain. No local or other after-effects appeared, although the powdered drug was over six months old.

Myopia in Russia.—The *British Medical Journal* of December 17, 1887, writes that the Russians appear to be as prone to become myopic as their neighbors the Germans. PROF. ADAMYUK, of Kasan, has published in the *Westnik Oftalmologie* a series of examinations of the refraction in pupils at a school. Each pupil was kept under careful observation from his entry into the school until his exit thence. The investigations continued for ten years. Amongst 317 first year's scholars, Prof. Adamyuk found that 165, or 52 per cent., were hypermetropic; 106, or 33 per cent., were emmetropic; and 45, or 14 per cent., were myopic. One case has been rejected out of the total 317. In the course of the year the refraction altered very notably. Myopia made progress in 90 per cent., hypermetropia only in 51.6 per cent., whilst 32 per cent. of the pupils who were emmetropic at the beginning of their school career underwent deterioration of their accommodation, generally in the direction of myopia. Apart from the purely ophthalmological aspect of Prof. Adamyuk's researches, it is interesting to note how a branch of the Aryan race, comparatively young to civilization, are already subject to all those psychological and pathological conditions which have generally been considered to be the essential results of political and social decay in older nationalities. Not only does the Russian mind tend to become excited on complicated questions about Divine right, democracy, or systematic anarchy, State churches or dissent, and other questions so familiar to us, the consideration of which has become part of the very nature of Western Europeans and Americans, but the eyes of young Russians appear to be no stronger in resisting the strain of continuous reading than are the eyes of many Westerns whose ancestors may have been able to read for centuries. Questions of hygiene, however, are connected with disorders of accommodation in schools; and, lastly, though older races may include many individuals who are mentally and physically worn out, young races may not be so ready, as a whole, to bear a strain of intellectual education to which they have not been accustomed.

Antipyrin in Sea-sickness.—DUPUY, in the voyage from Havre to Buenos Ayres and return, has given antipyrin to prevent sea-sickness, with the following results: The dose most generally useful was 23 grains, the effect of which was manifest in about ten minutes. More than 45 grains was never found necessary to procure relief in about an hour.

In rare cases, where the drug was vomited, a hypodermatic injection of 15 grains was efficacious.—*Gazette Hebdomadaire*, December 2, 1887.

Treatment of Blepharitis.—PARINAUD advises the following:

Hydrarg. oxid. rubri	3 grs.
Plumbi acetat. (crystall.) . . .	1½ grs.
Vaselin.	ʒ 2½.

The lids may be cleansed by the use of warm solutions of sodium bicarbonate, and a little of the ointment applied. —*L'Union Médicale*, November 29, 1887.

Fatal Tonsillar Hemorrhage.—DR. HALL writes from Colorado to the *Boston Medical and Surgical Journal* of December 22, 1887, reporting the case of a rancher who suffered from severe hemorrhage at intervals, following quinsy. Improvement followed tonic and astringent treatment; a decomposing clot was expelled, and the affected tonsil returned to its normal size. Eleven days later sudden and excessive hemorrhage occurred, proving rapidly fatal. In the absence of a post mortem, Dr. Hall considers the probable cause of death ulceration and rupture of the carotid artery.

Paralysis of the Abdominal Muscles.—At a meeting of the Paris Société de Chirurgie early in October, M. DEPRÈS exhibited a photograph of a woman whom two medical attendants had believed to be subject to ovarian disease. The abdomen was extremely pendulous, and measured forty-eight inches round the umbilical level. On careful examination M. Deprès found that the umbilical muscles were entirely paralyzed. The patient could not rise from her bed without supporting the abdomen with her hands. No contraction of the muscles occurred during movement or coughing, nor under any

form of electrical stimulation. Frequent pregnancies often cause distention, thinning, and consequent weakening of the abdominal muscles, but never paralysis. M. Deprès's patient had been only twice pregnant, and the labors were normal. In the discussion which followed, M. Lannelongue stated that he had seen paralysis of the abdominal muscles in anterior poliomyelitis, but without the symptoms noted in M. Deprès's case. M. Marc Sée believed that the pendulous abdomen was certainly most frequent amongst multiparæ, but had been observed in women who had borne only one child. M. Deprès replied that he had seen numerous cases of pendulous abdomen which simulated ovarian disease, but never, before this example, any instance of paralysis of the abdominal muscles which had caused symptoms mistaken for those observed in cystic tumors of the ovary. The case was certainly of great interest. Pendulous abdomen is a well-known affection; Landau has recently written an able treatise on its nature and treatment, and its due recognition is of importance to physicians and surgeons, as well as to obstetricians. A cursory glance or sweep of the hand over a pendulous abdomen may give rise to a serious error of diagnosis. Ascites, pregnancy, ovarian or uterine tumor may be suspected, especially when the walls are very thick, so as to interfere with resonance on percussion. In cold weather, or when the hand of the observer feels chilly, contractions of the recti are set up, and may give the erroneous impression that some solid growth is present. The support of a belt gives comfort, and to a certain extent cures the affection. Here we may note that Mr. Treves has recently declared that the belt is not advisable after ovariotomy and allied operations, as it interferes with the natural process of recovery which the muscles, weakened by long distention, would undergo if left to support themselves. However, many experienced authorities would dread the abolition of the abdominal belt after abdominal section, for hernia of the cicatrix is not rare; indeed, Dr. Homans, of Boston, discovered that it ultimately developed in ten per cent. of his patients, and those who are as careful about after-histories as Dr. Homans would possibly find their proportions just as high. Thus the question of the means of making the abdominal walls as strong as possible after an operation becomes very important, and the relative merits of Mr. Treves's principles and the usual practice deserve deep consideration. The case of true paralysis of the abdominal muscles described by M. Deprès must not be overlooked, since it is a condition which we may safely say has been frequently confounded with a simple pendulous condition of the abdominal walls.—*British Medical Journal*, Dec. 17, 1887.

Conservative Divulsion of the Cervix Uteri.—In the *St. Louis Medical Review* of December 17, 1887, DR. HULBERT reports elaborate calculations which he has made regarding the physiology of menstruation, and the amount of fluid which is expelled through a normal cervix. He concludes that in dysmenorrhœa from mechanical causes stenosis is infrequent, and that the operation of divulsion is allowable only when confined within the physiological limits of the tissues acted upon.

Mental Affections and Aural Disease.—Sufferers from noises in the ears are sometimes greatly distressed by the tinnitus, and cases of suicide have been ascribed to sheer desperation resulting from an inability to get relief from the everlasting noise. Ménière's disease and some cases of epilepsy are attributed to disease in the ear setting up changes in the central nervous system. The question is still unanswered whether actual mental disease, mania, or melancholy, may not be produced by aural disease, apart from any annoyance due to tinnitus or deafness. Coarse diseases, such as otorrhœa, suppuration in the mastoid cells, perforations of the drum, polypi, waxy concretions, and foreign bodies, are easy of recognition and can be appropriately treated, generally by simple surgical methods. But nervous affections due to irradiation from the obscure aural mischief are not always so open to treatment, because the changes in the ear are more subtle, but none the less real. Sometimes an obstruction of the Eustachian tube may be the chief cause of tinnitus, owing to unpoised atmospheric pressure leading to excitation of the labyrinth and acoustic nerve by actual compression. M. Boucheron believes that, besides vertigo, epilepsy, and other nerve troubles, mental disease may be originated, and simple inflation of the middle ear has been followed by a cure.—*Lancet*, December 17, 1887.

Cancer of the Larynx.—At a recent meeting of the Academy of Medicine of Paris, RUAULT reported the case of a man, sixty-three years old, who suffered from epithelioma on the right lower vocal cord. The symptoms gradually appeared during ten months' time. Laryngoscopic examination established a diagnosis several days after the tumor began to ulcerate. The general condition of the patient was excellent; the growth was circumscribed; there was no glandular swelling. The surgeon decided to perform thyrotomy, and partial laryngectomy if needed. Tracheotomy was first made, but the patient died of pneumonia two days afterward. The autopsy and microscopic examination showed a lobulated, warty carcinoma, exactly limited to the ligamentous portion of the lower vocal cord, of which the anterior and posterior extremities were healthy for a considerable extent. The conclusion reached was that the partial excision, if carried out, would have resulted in cure. Early diagnosis is of the greatest importance, and early operation.—*L'Abeille Médicale*, December 12, 1887.

A Convenient Mixture for Toothache.—From *L'Union Médicale* of December 1, 1887, we take the following:

Ext. opii (alcohol),		
Camphor. pulver.,		
Balsam. Peruvian.	ãã	8 grs.
Resin. mastich.		15 "
Chloroform.		ʒ 2½.

A solution to be made; in which a pledget of cotton is to be dipped, and inserted in the tooth.

Acute Thyroiditis.—The thyroid gland may be the seat of an acute inflammatory enlargement running a definite course without suppuration and terminating in perfect recovery. In these clinical characters we find a resemblance to ordinary mumps. Dr. Barlow read a paper on "Acute Enlargement of the Thyroid Gland," at the last meeting of the Clinical Society, and he related the case of a little boy, aged three, in whose thyroid gland an attack of inflammation occurred, which lasted altogether about a fortnight. The child had just previously suffered

from erythema nodosum on the legs, and it was whilst recovering from this affection, and after having been out in the park, that the thyroid enlargement commenced in association with a nasal catarrh, of which the chief symptom was a discharge of thin glairy mucus. Reviewing the literature of the subject, Dr. Barlow arrived at the conclusion that his case must be regarded as coming under the "idiopathic" class of Lucæ, and although there had been erythema nodosum, still the absence of arthritis and heart disease or other genuine rheumatic manifestations formed a warranty for not considering the case as of true rheumatic nature. Some observers, chiefly abroad, have noted a rheumatic swelling of the thyroid having a definite relationship with well-founded rheumatism; and Dr. Angel Money quoted a case of this character from his own experience. Mr. James Berry narrated many interesting particulars concerning acute enlargement of the thyroid gland; and some of these having a fatal ending might tally with cases like the one narrated by Dr. Barlow, in which the enlargement at one time had a threatening aspect. Nevertheless, the definite cycle run by cases of rheumatic and idiopathic descriptions must, we think, be held to differentiate them from ordinary goitre, in which the mode of commencement may be acute, but the course always chronic, and showing recurrent tendencies. The perusal of Dr. Barlow's paper will raise the reflection that the causation of acute thyroid enlargement is as imperfectly known as it is seemingly various.—*Lancet*, December 17, 1887.

A Curious Accident.—DR. PRINGLE reports, in the *Edinburgh Medical Journal* for December, 1887, the case of a man, aged twenty-two, who was admitted to the Royal Infirmary, having sustained the following accident: He was employed in a sawmill in the city, and it was his duty to guide the piece of wood which was being sawn. While at his work that morning, a board which had just been cut from a log, from some cause unexplained, came in contact with the teeth of the saw, which was revolving at a rate, at its circumference, of 4000 feet per minute. The end of the board nearest the patient was smashed into splinters, only two of which, however, were torn completely off it; these two struck the patient with tremendous violence just below the nasal bones. The appearance presented by the patient at the time of his admission was a most ghastly and extraordinary one.

From the articulation between the nasal bones and cartilages there was a lacerated wound, at the bottom of which the superior maxilla was exposed, running down to the right angle of the lower jaw, and passing one inch above the angle of the mouth. From just below the nasal bones the two splinters of wood projected, the shorter passed straight back through the nasal cavity, the longer down under the cheek, and projected the skin at the left angle of the lower jaw. The patient was so violent that he had to be put under the influence of chloroform until Mr. Annandale's arrival. The longer of the two splinters was easily removed, but the shorter was wedged as firm as a rock, and to get it out Mr. Annandale had to split the hard palate with a chisel introduced through the wound, and so lever the superior maxillæ apart, and even then it required considerable force to extract it. There was comparatively little hemorrhage. The nasal cavity was plugged with lint and the wound stitched up. His pulse was very feeble and rapid; his respirations forty per minute, and rather difficult. As the soft palate was somewhat swollen, a tent and bronchitis kettle were got up, and an ice-bag applied to his head. At 12 o'clock his breathing suddenly became very labored, and patient cyanotic. Tracheotomy was performed with immediate relief. On passing the finger into the mouth, the soft palate was felt to be so much swollen that it almost entirely obliterated the fauces. At 8 P.M. his breathing had become Cheyne-Stokes in character, and sixty per minute; his pulse so rapid and feeble that it could not be counted. He lingered on and died at 4 A.M. next morning, never having regained consciousness.

Post-mortem.—The turbinated bones, vomer, and right superior maxilla comminuted. The hard palate was transversely fractured, but the mucous membrane not involved. Epiglottis and back of tongue seemed normal; soft palate slightly lacerated. Lungs extremely congested and œdematous, but so altered by putrefactive changes, that it was not possible to say if blood had been inspired. The membranes of the brain injected. The brain had received no injury; there was no fracture of the base of the skull. The longer of the two splinters measured fourteen inches in length, and was half an inch thick, and tapered from a point half an inch by half an inch to the other end, which measured half an inch thick by one inch broad; it had entered to a distance of three inches. The shorter one measured five and a half inches long; its *larger* end, *which was the one which entered*, measured three-quarters by half an inch, and there was only three-quarters of an inch projecting beyond the soft parts, leaving four and three-quarters inches buried in the nasal cavity.

"Arsenic Cancer."—As the mind is naturally caught by the curious and by the threatening, so we cannot avoid alluding to the subject which MR. JONATHAN HUTCHINSON raised at the last meeting of the Pathological Society. We fear, however, that at present further light is required before our knowledge can be considered satisfactory. Many amongst us having a strong belief in the efficacy of arsenic know well its power to produce disease; but, judged from the discussion at the Pathological Society, some do not appreciate the influence of arsenic on the skin. The skin *par excellence* is the tissue on which arsenic has perhaps its most marked influence; besides improving, it may spoil the complexion, rendering it muddy and unsightly. This latter action is also manifested in all parts of the skin, and may lead to the dedelopment of soft corns, not warts, in the palms of the hand and soles of the feet, where a roughened condition also grows up under the influence of this most potent drug. So far Mr. Jonathan Hutchinson goes with safe step on sure ground, but the next move onward toward the belief that arsenic can produce epithelial cancer is less secure. It cannot be said outright that arsenic may be the chief cause of epithelial cancer, but we think the position almost impregnable if it be maintained, as, indeed, Sir James Paget and Mr. Hutchinson strongly held, that arsenic may prove one of the causes of epithelial cancer in certain constitutions. Nevertheless, arsenic will not fall into disrepute, for at the worst it is only when continued for many years in very full doses that the drug is alleged to have so deleterious an action. Such a revelation, if it ever comes, will only make medical practitioners more careful in prescribing arsenic.—*Lancet*, December 17, 1887.

Acute Pulmonary Paresis.—At the last meeting of the Medical Society of London, DR. B. W. RICHARDSON called attention to a class of cases presenting such peculiar features as to warrant, in his opinion, the belief that the symptoms are due to a loss of nerve power, resulting in acute vasomotor paralysis of the vessels in the pulmonary area. Though not common, most practitioners must be able to call to mind cases, diagnosticated as pneumonia, where the patient rapidly dies of asphyxia in spite of all that can be done to check the morbid process. The cases alluded to by Dr. Richardson were mostly in women of a neurotic type. Under the influence of a physical or moral shock, not necessarily of any great intensity, nervous phenomena of a hysterical type manifest themselves, followed by intense prostration of body and mind. In the course of a day or two, examination reveals the advent of pneumonic *râles*, and then, without fever, for the most part without pain, and without many of the characteristic signs and symptoms of ordinary pneumonia, the patient rapidly succumbs. Treatment in every case is utterly without avail. Not less interesting than the observations so carefully narrated, are Dr. Richardson's remarks on the effect of nitrite of amyl in bringing about an identical condition of things in animals submitted to its influence. The pathological phenomena are those which physiology teaches us result from section of the nerves which innervate the lungs; and, on this ground, Dr. Richardson argues that the asphyxial phenomena which terminate the rapid and fatal course of this redoubtable disease are attributable to a sudden suppression of nerve power. It could hardly be anticipated that this addition to medical nomenclature would pass unchallenged; and, while the paper will certainly call attention to a class of cases hitherto very imperfectly understood, his views evidently failed to find acceptance on the grounds put forward in their behalf. It appears certain that, to explain the sudden and violent breaking down which is met with in certain cases of so-called pneumonia, either some influence must have been superadded to the usual processes, or we must look to another category of causes altogether to account for the collapse.

Hypnotic Suggestion in Nicotinism.—At a recent meeting of the French Anti-tobacco Society, DECROIX compared the appetite for tobacco to that for alcohol, and suggested hypnotic suggestion as a remedy. VOISIN also reported cases which had been cured by this means after other remedies had utterly failed.—*L'Abeille Médicale*, December 12, 1887.

Sterility in the Male.—DR. KEHRER, of Heidelberg, has recently published some researches on this obscure subject in a work entitled *Beiträge zur Klinischen und Experimentellen Geburtskunde und Gynäkologie*. To 40 already reported cases of sterile marriages where he had examined the semen, he has added 56 more. In 3.12 per cent. complete impotence was certain; in 30.21 per cent. the semen did not contain spermatozoa (*Azoospermia*); in 11.45 per cent. these organisms were deficient in quantity (*Oligozoospermia*), and in 55.20 per cent. they were present in abundance (*Polyzoospermia*). Amongst the cases of azoospermia, in many instances no cause for the anomaly could be traced; in a fifth masturbation had avowedly been practised; in more than two-thirds the subjects had suffered from gonorrhœa, but disease of one or both testicles could not be detected in many of these patients, so that Dr. Kehrer suspects other complications besides disease of the epididymis, such as obstruction of the ejaculatory duct through prostatitis, or fatty degeneration of the tubuli seminiferi. The proportion of subjects where there had been gonorrhœa was the same in the cases of oligozoospermia, where yet a chance of fruitful coitus remained, whilst amongst the sterile men where polyzoospermia was discovered, only half as many had been subject to gonorrhœa. Dr. Kehrer believes, judging from his researches, that in at least a third of the cases of sterile marriages the husband was the party at fault, and gonorrhœa was the primary cause of the barrenness. Here it must be remembered that, unfortunately, that disease is extremely common amongst young unmarried men, and in making researches in long series of fertile marriages, a large proportion of the husbands would probably be found to have suffered from gonorrhœa. Noegerrath fell into a doubtful line of argument somewhat like that of Dr. Kehrer, and Bumstead, amongst others, exposed the fallacy. Dr. Kehrer believes that other sources of sterility will yet be discovered, such as influences directly prejudicial to the germ-cell or sperm-cell.—*British Medical Journal*, Dec. 17, 1887.

Bacteriology of Smallpox.—PROFESSOR J. HLAVA describes in the *Sbornik Lekarsky*, a Bohemian medical journal, the results of some microscopical and bacteriological researches he has lately made on the contents of variolous pustules and the blood and viscera of smallpox patients. In four out of five cases streptococcus pyogenes was found in the blood and viscera. In the skin and in the pustular contents there were found, in addition, staphylycoccus albus, saccharomyces (Proteus Zenkeri), and staphylococcus citreus cereus. The identity of the microörganisms found with pyogenic microbes was demonstrated experimentally, but none of them produced smallpox. Professor Hlava believes that the variolous poison produces characteristic changes in the epithelium of the skin, and that in consequence of these pyogenic cocci invade the dermis, being carried thither by the circulation, which they enter through abrasions of the surface of the pharynx and larynx, which, he says, are invariably to be met with in smallpox patients. Thus variola would appear to be, in the majority of cases, a disease due to a mixture of infections, variolous and pyogenic, the latter class of infection entering the body subsequently to the former.—*Lancet*, December 17, 1887.

Antipyrin in Hæmoptysis.—In the *Meditzinskoïe Obozreniïe*, No. 5, 1887, p. 520, DR. M. BYVALKEVITCH, of the Vilna Military Hospital, states that antipyrin is an excellent remedy for pulmonary hemorrhage of every kind. The statement is based on ten cases of hæmoptysis in patients suffering from phthisis, bronchiectasis, cardiac disease, and traumatic injury of the chest. The following mixture was invariably employed by Dr. Byvalkevitch: ℞.—Antipyrini, ʒss; aq. destil., ʒiv; essentiæ menthæ pip., gtt. xv. M.D.S. A tablespoonful every two or three hours. In none of the cases were more than two doses of the mixture required completely to arrest hæmoptysis, even when the daily loss of blood amounted to two fluid pounds. In some of the patients ordinary hæmostatics, such as ergot, ergotin, digitalis, atropine, and Haller's elixir, had been previously tried without effect.—*British Medical Journal*, December 17, 1887.

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SUPRAPUBIC LITHOTOMY IN MALE CHILDREN.

BY far the most noteworthy contribution of the past year to the operative surgery of vesical calculus is that of ASSENDELFT, of Wetoschkino, Russia, who reports, in the *Archiv für klinische Chirurgie*, Bd. xxxvi., Hefte 1 and 2, the details of one hundred and two cases of epicystotomy for stone, with only two deaths, a success which is as wonderful as it is unparalleled. As not less than eighty-one of the subjects were male children, among whom the two deaths were met—one from peritonitis, and the other from purulent bronchitis, their ages having been, respectively, two and four years—we propose to set before our readers an analysis of the results attained by Assendelft, and compare them with those afforded by litholapaxy and lateral lithotomy in the same class of subjects.

The age of 38 patients varied from two to five years inclusive; 27 were between six and ten years inclusive; and 16 ranged between eleven and fifteen inclusive. The hospital in which they were treated was in an excellent sanitary condition. The steps of the operation are as follows: A catheter having been inserted into the bladder, enough of a one-half per cent. carbolic acid solution is thrown into the viscus to render it prominent above the pubes. The Garson-Petersen rectal bag is dispensed with, but the catheter is retained to facilitate the future steps of the operation. The incision in the linea alba is carried from just below the border of the symphysis pubis upward for a distance which varies between an inch and three-quarters and three inches, from one and three-quarters to two inches being, as a rule, sufficient. The prevesical space having been exposed, its fatty tissues are divided until the bladder is reached, care being taken to avoid the veins, or to ligate them should it become necessary. The bladder, previously fixed with tenacula, is opened from above downward with a sharp knife, the incision varying in length from four-fifths of an inch to one inch for small stones, or extending to two and a quarter inches for large concretions. If in this step of the operation the peritoneum should be seen, it is held back by the index finger. Any bleeding from the vessels of the bladder having been arrested, which is not always easily done, the stone is extracted with the finger or the forceps, avoiding, if possible, its fracture, which is liable to provoke hemorrhage from the vesical mucous membrane. The bladder is now washed out with a one-quarter per cent. carbolic solution, and a one-third of an inch drainage tube, or two smaller tubes, passed into its cavity, and fixed by Carlsbad pins. The divided recti muscles, or their sheaths, as well as the skin, are approximated by catgut sutures to the point of exit of the drains. The wound is powdered with iodoform, and covered with iodoform and salicylic gauze, which are properly secured in position, and the patient is placed upon his belly, with the head elevated by a small pillow, a position to which he soon becomes accustomed.

For the first four or five days the dressings are changed from six to eight times in the twenty-four hours. At the end of this time a smaller drain is employed, or if two were inserted originally, one is omitted. As soon as the patient begins to pass urine by the urethra, which happens, on an average, in nine or ten days, drainage is dispensed with, and the patient can lie on his back. Complete cicatrization of the wound occurs, exceptionally, as early as the sixteenth or eighteenth day; but it may be delayed for four or even five months, the average being thirty-seven days.

The peritoneum was seen in the upper angle of the wound in 19, or nearly 24 per cent. of the cases, and it is interesting to note that 76.47 per cent. of the subjects were between two and five years inclusive; 17.64 per cent. were six years of age; and 5.88 per cent. were seven years of age. These observations indicate how slight are the risks of wounding that membrane during the operation; and they tend to confirm the statement of Pitha, that after eight years the peritoneum descends only one or two lines

below the umbilicus. The fact that the bladder is still an abdominal organ up to eighteen years, through which a large surface is uncovered by peritoneum, renders impubic subjects peculiarly fitted for epicystotomy. Hence, the Petersen bag may be dispensed with.

Among the primary risks of the operation, hemorrhage was the most common. In 6 cases there was free bleeding from the arteries of the bladder-wound; in 2 from the mucous membrane of that organ; and in 1 from the prevesical space. In 4 cases there was reactionary hemorrhage. In 3 secondary bleeding was encountered, in 2 of which it was so serious as to necessitate reopening of the wound, and plugging with iodoform gauze. Phlegmonous inflammation of the groin and of the penis, and necrosis of the tissues of the prevesical space were witnessed, each, in 1 case. In 3 cases there was peritonitis, and one of these proved fatal. In not less than 29 of 61 cases in which the details are perfect, the edges of the wound separated, the separation being partial in 6, and complete in 23. This complication may be set to the account of the catgut sutures employed for sewing up the wound. In 9 examples hernia of the mucous membrane of the bladder rendered extraction of the stone difficult. In several of the cases the patients were so ill that they barely escaped with their lives.

As the natural outcome of his wonderful success—the mortality having been only 2.47 per cent.—Assendelft recommends the adoption of suprapubic lithotomy to the exclusion of other procedures; but the success of any operation should not be based upon the practice of a single surgeon. We happen to have notes of 90 additional antiseptic, suprapubic lithotomies in impubic boys. Of these 20 perished—a mortality of 22.22 per cent.—13 from peritonitis, 3 from prevesical phlegmon, 1 from urinary infiltration, 1 from purulent nephritis, while we are unable to state the cause of death in the remaining 2. Of these 90 cases, Schmitz, of St. Petersburg, had 23 with 5 deaths, a mortality of 21.73 per cent. Adding the 90 additional cases to the 81 of Assendelft, 171 cases afforded 22 deaths, or a mortality of 12.86 per cent., which must be regarded as the proper death-rate of antiseptic epicystotomy for calculus in boys.

Better results than those of Assendelft have been attained from other procedures by other operators. Thus, Surgeon-Major Keegan, of Indore, about a year ago published a table of 58 cases of Bigelow's operation in male children whose ages ranged from twenty-one months to fourteen years, with one death, or a mortality of 1.72 per cent. The ages of 46.53 per cent. of his patients varied from less than two to five years inclusive; 41.37 per cent. were between six and ten years inclusive; and 12.07 per cent. ranged between eleven and fourteen inclusive. For the same period Assendelft's cases showed, respectively, 46.49, 33.33, and 19.75 per cent. In Keegan's cases the stone weighed less than fifty grains in 46.42 per cent., between fifty and a hundred grains in 16.07 per cent., up to two hundred grains in 19.64 per cent., and above two hundred grains in 17.87 per cent. In Assendelft's cases the same weights are represented by 38.27, 17.29, 22.22, and 22.22 per cent. Hence, Keegan crushed more subjects of tender years than Assendelft cut, although the stones in the cases of the latter were, as a rule, more bulky.

Turning from litholapaxy to lateral lithotomy, still more satisfactory results than those of Assendelft's are shown by Freyer, who cut 165 boys without a single death, and by the surgeons of the Children's Hospital of Moscow, whose last 72 cases, according to Werewkin, were all successful; and yet there is no more reason for recommending the exclusive adoption of lateral lithotomy in boys than there is for the exclusive resort to epicystotomy or rapid lithotrity. As yet the last operation has not been sufficiently tried, so that a comparison can only be drawn between the first two procedures as practised in late years. As we have already seen, antiseptic suprapubic lithotomy is attended with a mortality of 12.86 per cent., and requires thirty-seven days for the healing of the wound. Freyer's 165 cases of lateral lithotomy, all successful; Ramnarain Dass's 87 cases, with 3 deaths; S. D. Gross's 72 cases, with 2 deaths; Rosenthal's 203 cases, with 13 deaths; Kovac's 57 cases, with 3 deaths; Post's 106 cases, with 2 deaths; and 147 cases, with 9 deaths, in the Children's Hospital of Moscow, afford 837 cases, with 32 deaths, or a mortality of 3.82 per cent. Add to this seventeen days for healing of the wound, and the advantages are all on the side of the perineal operation.

If the surgeon were forced to limit himself to one procedure, he should choose lateral lithotomy; but the wise operator will select his cases, reserving epicystotomy for large calculi and encysted calculi. The latter method is being carried to an unwarrantable extreme by German and French surgeons. We daily read cases in which it is practised for stones which weigh eight, ten, fifteen, or twenty grains, and

which could have been safely crushed or removed through the perineum, instead of subjecting the patient to greater risks and to a more prolonged confinement.

In conclusion, we may be allowed to express the opinion that, in the present state of our knowledge, a stone in a boy should be removed by the lateral method, with the reservation that after the age of seven, if the concretion be of moderate dimensions, the median will be the safer procedure; while a large calculus at any age will call for the high operation. Should the last of these methods be selected in view of its comparative success in children, suture of the bladder should be practised, and a drain retained in the prevesical space. If the vesical wound should reopen, nothing will have been lost; should it remain closed, the subsequent treatment will be greatly shortened, and the patient will be spared the inconvenience of lying on his belly. In point of fact, if there be no cystitis, and the urine be clear, suturing the bladder will, as a rule, be attended with primary union. It ought also to be added that the superficial wound should be approximated down to the drain with the continuous silk aseptic suture, to guard against its reopening, as happened so frequently after the use of catgut in the cases recorded by Assendelft.

FREE HYDROCHLORIC ACID IN THE STOMACH.

THE diagnostic importance of testing the stomach contents for free hydrochloric acid, to which attention was called in THE MEDICAL NEWS of August 20, 1887, is beginning to be recognized, as is evidenced by its recent employment in some of our hospitals, and it may be useful for us now to point to certain sources of error that may vitiate the results thus obtained, and also to state that DR. ALFRED GÜNZBURG, of Frankfort-on-the-Main, has recently discovered another test, which is claimed to be free from some of the objections of which we previously hinted. As an instance of the latter, gentian-violet, which is, perhaps, the best of the substances hitherto used to detect free hydrochloric acid in the gastric juice, gives the same reactions when the organic acids, especially lactic, are present in large amount. The same is true of tropæolin and Congo red; hence obvious sources of error.

The test about to be described is based on the discovery by Wiesner that pine wood dipped in a solution of phloroglucin, and then moistened with concentrated hydrochloric acid, is colored a dark red. Max Singer ascertained that the substance in the wood which, when in contact with phloroglucin and hydrochloric acid, strikes a red color, is vanillin. The reaction was studied more minutely by Etti, who found that pyrogallol, in the presence of vanillin and hydrochloric acid, behaved much in the same way as phloroglucin.

For the sake of convenience, Günzburg selected phloroglucin for his test, which is as follows: Thirty grains of phloroglucin and fifteen grains of Merck's vanillin in about an ounce of absolute alcohol, make a yellowish-red solution. A trace of concentrated mineral acid added to this solution produces a bright red color, and, at the same time, there takes place a separation of beautiful red crystals. Concentrated organic acids (lactic and acetic), either alone or mingled with chlorides, give no such reaction. The mineral acid to which the reaction is due must be concentrated. If diluted, the color does not appear until some of the fluid is driven away by heat, when the red crystals appear. *Boiling must be carefully avoided.*

The following is the technique for application to the examination of the stomach contents: A few drops of the filtrate of the latter are mingled in a porcelain dish with the same quantity of phloroglucin-vanillin solution, and carefully heated. According to Günzburg, the reaction will take place invariably if one-tenth of one per cent. of free hydrochloric acid be present, a delicacy at least equal to that of the aniline solutions. If but one-twentieth of one per cent. of the acid be present, the reaction occurs in the form of red streaks, and below this degree it ceases altogether. Günzburg is of the opinion that a quantitative estimate of the amount of hydrochloric acid may be made in accordance with the intensity of the reaction, but it is doubtful whether any near approach to accuracy could thus be obtained.

THE DIURETIC INFLUENCE OF STROPHANTHUS.

So much has appeared in the journals during the last few months concerning strophanthus and its effects on the heart, that its action on the rest of the system has been overlooked. In the *Gazette Hebdomadaire* of December 9, 1887, MAIRET and COMBEMALE give us the result of their studies on its action on the secretion of urine and the elimination of urea. They found that the quantity of urine was considerably increased, and that the urea, while not always altered in amount, was generally increased.

This occurred when the drug was used by the stomach or hypodermatically. As to its action on the kidney they found that it increases the urinary flow both by mechanical pressure, due to greater arterial tension, and also by a direct stimulation of the secreting structure of the kidney.

Both of these investigators believe that cumulative effects do not occur after the prolonged use of strophanthus, but until the drug has been more widely used we doubt whether this statement can be received as proven. So little is known as to the renal effects of the drug that it is possible that it may be too irritating to use constantly in case of kidney lesions, particularly of an acute and active type, and all the evidence points to its use in cardiac lesions rather than those of the renal tissues.

RECOVERY IN CIRRHOSIS OF THE LIVER.

IN THE MEDICAL NEWS of September 18, 1886, we referred to a discussion which had taken place at one of the Paris societies on the subject of the curability of cirrhosis of the liver, and the case recently reported in THE MEDICAL NEWS, by DR. MACDONNELL in the proceedings of the Montreal Medico-Chirurgical Society, illustrates a point in practice which is too frequently overlooked. It is still customary with many physicians to defer tapping in hydroperitoneum until diuretics and cathartics have been thoroughly tried, and the trocar is resorted to only when the distention has become extreme. The late DR. FLINT was, we believe, the first to advocate early and repeated tapping in this condition, and in his work on clinical medicine he refers to several cases in which in years no reaccumulation of fluid took place. Dr. Macdonnell's patient was tapped sixty times within a year, and after about 9000 ounces of fluid had been removed no reaccumulation occurred, and the woman apparently got well. Continuous drainage has also been practised with good results.

The factor which determines the onset of dropsy in cirrhosis of the liver is not always clear. The highest possible grade of portal obstruction, even obliteration of the vena portæ, may exist without it, and a rich development of anastomosing vessels may compensate fully the destruction of branches within the liver. At least one-third of all cases of the ordinary atrophic cirrhosis are met with accidentally on the post-mortem table in persons dead of other affections. So long as an active collateral circulation is maintained there may be no symptoms. When we consider the extraordinary capacity of the abdominal vessels and the variations in blood supply to which they are liable, we can readily understand that conditions of distention of the portal radicles might arise with which the collateral circulation could not cope; and a sudden hematemesis or the development of ascites would represent a failure in a compensation hitherto effective. It is possible, as some writers have suggested, that owing to changes in the serous layer the capillaries are rendered more permeable and without any increase in the blood pressure permit of the transudation.

The practical point is this, that in certain cases of cirrhosis the effusion results from changes which are not necessarily permanent, and we should not regard the onset of dropsy in every case as the beginning of the end. Clinical records point to early and frequent tapping as the very best measure in ascites, not only as affording immediate relief to unpleasant or urgent symptoms, but as holding out a prospect in some cases of the removal of the conditions on which it depends.

THE South Carolina Medical Society celebrated its ninety-eighth anniversary on the evening of December 12th. As is the custom, new officers were elected as follows:

President, Dr. Manning Simons; *Vice-president*, Dr. T. Grange Simons; *Treasurer*, Dr. John L. Dawson, Jr.; *Secretary*, Dr. Charles W. Kollock. After the meeting, a handsome supper was served at the Charleston Hotel.

This is not the State Society as its name might indicate, but is the County Medical Society.

The new Charleston City Hospital is rapidly nearing completion, and the site chosen on the banks of the Ashley is in every way desirable.

THE New York Academy of Medicine has received another accession to its library of five thousand volumes by the gift of the late Dr. Middleton Goldsmith, formerly of New York and Louisville, but latterly of Rutland, Vermont, where he died in November last. Dr. Goldsmith's name will be recalled by many in connection with his plan of treatment of hospital gangrene by bromine; he was also an early advocate for the pavilion hospital during the late war. His gift of books was made shortly before his death, through his old friend, Dr. John C. Peters, of New York. So many of these newly acquired books as are already in the reference department of the Academy library will be placed in its circulating branch.

THE Crown Prince is said to be improving in respect of the diminution in size of the laryngeal growths; but, inasmuch as the damp weather at San Remo has compelled him to remain indoors so much of the time, it is probable that he will go to Cairo for the remainder of the winter.

From Berlin, we learn that Prof. Virchow is making a careful study of all the pathological specimens within his reach, for the purpose of discovering if there has ever existed a case in which a benign growth and a cancerous one have grown up side by side. He has as yet found no instance of that nature; and, inasmuch as he has never found any malignant characteristics in the three specimens from the Prince removed by Mackenzie, he infers that the new formations, of which no microscopic examination has been made, are likewise non-malignant.

REVIEWS.

A MANUAL OF MEDICAL JURISPRUDENCE, FOR THE USE OF STUDENTS AT LAW AND OF MEDICINE. By MARSHALL D. EWELL, M.D., LL.D., Professor of Common Law in Union College of Law, Chicago, Ill. 12mo. pp. 409. Boston: Little, Brown & Co., 1887.

A SOMEWHAT careful perusal of this little work has left a very favorable impression of its general soundness, and of its adaptation to the wants of the busy student and practitioner, both of law and medicine.

The author, in his preface, modestly disclaims for it anything more than a "careful compilation of what seemed to be the best authorities of the leading principles of the science." He has certainly shown a diligent and careful study of these leading authorities; especially appealing to Drs. Tidy, Ogston, and Spitzka—the latter being his chief authority on insanity.

The limits of his volume preclude any allusion to *special* Toxicology, but his observations on Poisoning in general are sufficiently plain and practical; and, although necessarily much condensed, they embrace what is really essential to the general student.

One criticism we would offer in relation to the *guaiacum-test* for blood. The author, after correctly stating the method of applying this test, reminds the reader that many other substances besides blood will produce a blue discoloration with guaiacum. This statement, while true, is slightly obscure, and might lead to an erroneous impression: the fact being, that whilst all these other substances do occasion the blueing of the guaiacum, blood will *not* change its color immediately, when used alone, *but only on the addition of hydrogen peroxide.*

The author, in common with most authorities, is of the opinion that it is impossible to distinguish the human blood-corpuscles from those of the lower mammalia; and while quoting the late Prof. Joseph G. Richardson's microscopic researches on this subject, he omits to mention his very positive assurances and proofs of being able, by the use of very high powers to discriminate with great certainty between human blood and that of the more common domestic animals with which it would be most likely to be confounded in a murder case, viz., the sheep, cow, horse, goat and hog. This fact is certainly worthy of consideration by the medical jurist, and its accuracy has been verified by the present writer.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, December 28, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. HOWARD A. KELLY read a paper on

THE REMOVAL OF THE UTERINE APPENDAGES FOR DISEASE IN WHICH PAIN IS A PROMINENT SYMPTOM.

(See page 36.)

DR. JOHN C. DACOSTA believed that many unnecessary operations are done, and that it is better practice to cure a woman and leave her with her organs intact, rather than by a brilliant operation to unsex her, without the certainty and with only the hope of relief. He took decided ground against the great number of abdominal sections now being made, including those made for "pain alone." He held that a large proportion of the operations as done, and for the reasons alleged for operating, are unjustifiable; that the published reports of many cases said to be cured by operation are unreliable. For though the operator may have been honest in thinking when he made his report that he had cured his patient—the after-history of the case sometimes showed failure. That the spaying of women for pain alone, and for many of the other supposed causes of trouble for which it is done, and in the miscellaneous way in which it is done, he believed is unwarranted.

DR. W. H. PARISH said that recent experience and literature are teeming with abundant evidence that diseases of the appendages, and more especially of the tubes, are of really the greatest frequency. Most usually the affection is inflammatory in character, and dependent upon catarrh, gonorrhœa, or sepsis. At the time when removal of the appendages is justifiable, sterility has been already established by the disease itself, and such treatment as will obviate that stage of progress of the disease which indicates surgical interference, will also tend to lessen the probability of the establishment of sterility. What is to-day a mild inflammation of an appendage, is liable—it may be very quickly—to become a condition even threatening life, and he is confident that some of the measures to-day directed by many against associated vaginal or uterine inflammation, do frequently aggravate greatly a latent and subsiding salpingitis and ovaritis. Too irritating an application to a gonorrhœal endometrium will certainly convert a quiescent inflammation of the tubes into a pus-forming salpingitis. The same is true in reference to applications made in other forms of endometritis. Gonorrhœa is the most important cause of dangerous salpingitis. The German writers pronounce the catarrhal form of most frequent occurrence, but they find this form most common in prostitutes, and we are most likely to assume, and correctly, that the disease in the prostitute is of gonorrhœal origin.

Hemato-salpinx often endangers life, inasmuch as rupture of a tube containing such altered blood as is found in that affection may originate fatal peritonitis. Now one of the causes of hemato-salpinx is stenosis by narrowing or by flexion of the cervical canal—securing the patulency of that canal may permit the tube to empty itself gradually into the uterus, just as it does after opening up the vagina or uterus in hematomatra or hematocolpus. The inflammatory cases of tubal and ovarian disease are divisible into three groups: one of mild character, on which probably no one would operate for removal; another group, in which the accumulation of pus is so large, and the symptoms so grave that, probably, all operators would agree as to the necessity for removal; and then there is an intermediate group, in which surgical opinion would be at variance as to the propriety of removal. In this group the tubes and ovaries are in a condition of more or less subacute or chronic inflammation, with extensive adhesions, and probably some cystic degeneration. Physical examination does not always in these cases clear up the indications. The environments of the patient, the symptoms and the progress of the case after prolonged judicious treatment, must as yet decide the question.

When, after removal of the inflamed appendages, the relief is not complete, or it may be there is no relief, the explanation is to be looked for often in the incomplete character of the removal—a portion of the tube, especially the uterine portion, or a portion of the ovary has been left, and this becomes the focus of other trouble.

DR. E. L. DUER said that Dr. Kelly has emphasized for us the advantage of the educated touch. Dr. Coe, of the Woman's Hospital, of New York, states that but one-fifth of the ovaries removed are diseased. Pain is such a prominent symptom that it can hardly be called a neurotic manifestation. It is often due to adhesions or to pressure, excepting in cases of gonorrhœal origin, or pus-containing tubes. This question has resolved itself into one of environment. The poor woman who must keep up and at her work, has no relief but by the knife. The rich woman who can be cared for with rest and favorable surroundings, may be relieved, sometimes, for example, by the patient and persistent stretching of adhesions and restoring the circulation of surrounding parts.

DR. SINKLER said that the operation of removal of the ovaries is of great interest to neurologists, because many of the cases of hysteria and nervous prostration which came under their care, are connected with pelvic pain or dysmenorrhœa. Besides Charcot's observations in hystero-epilepsy, relieving the paroxysm by pressure over the ovaries would seem to indicate that in such cases a cure might be expected from removal of the ovaries. The result of the operation, however, although satisfactory in some, is disappointing in a great many cases of this character. He had under his care quite a number of patients in whom the ovaries had been removed for hysteria, neurasthenia, pelvic neuralgias, etc. One case, about twenty-three years of age, an extreme case of hysteria and a persistent masturbator, was under his charge at the Orthopœdic Hospital and Infirmary for Nervous Diseases. After seven months, being unimproved in every respect, she was discharged, and was taken by her friends to another hospital, where her ovaries were removed. After a few months she again came under his care, and he found her in as bad a condition as ever. The hysteria was as marked and she masturbated very often. She did not improve in his hands, and he had recently heard of her after an interval of nearly three years, in a worse state than ever before.

Another case is a lady of forty-two years, who, three years ago, had the ovaries removed for dysmenorrhœa, pelvic distress, and general neurasthenia. After a course of rest treatment she has improved greatly; but it is an interesting fact that she still has attacks in which she says there is a sensation of uterine contraction and pressure, just as there was before the operation.

In conclusion, while he would hesitate to recommend removal of the ovaries for the relief of pelvic pain alone, he did not question that there are many cases of hystero-epilepsy and extreme neurasthenia dependent upon violent and prolonged dysmenorrhœa or ovarian pain, in which the operation is not only justifiable, but is decidedly indicated.

DR. CHAS. K. MILLS said that the ground taken by Dr. Kelly can scarcely be attacked if, as he understood him, operation should be only undertaken in the first place, when local disease can be clearly made out, and, in the second place, such disease can nearly always be recognized by proper methods of examination. Certainly, however, in very many cases of pelvic pain, no disease of the ovaries, tubes, or uterus can be recognized, or, indeed, is present. We have true neuralgias of these organs as we may have of any viscus. Before too much significance be given to the ovaralgia of Charcot, it should be recalled that even in male hysteria, pain in one or the other iliac region has been met with in a number of reported cases. As to the view expressed that operation is sometimes called for when hystero-epileptic and other morbid phenomena are exhibited at or near the menstrual period, we should hesitate in accepting this dictum. All nervous symptoms are likely to be aggravated or excited in neurotic women at the menstrual period. In the *American System of Practical Medicine* he had reported two cases of hystero-epilepsy in which the operation of oöphorectomy was performed. In one of these cases clitoridectomy was also performed. The hystero-epilepsy was not cured in either case. His conclusions are given in this work as follows: "With reference to oöphorectomy for hystero-epilepsy or any form of grave hysteria it may be concluded: 1. It is only rarely justifiable; 2. It is not justifiable in the case of girls who have not menstruated; 3. When disease of the ovaries can be clearly made out by local objective signs, it is sometimes justifiable; 4. It is justifiable in some cases with violent nymphomania; 5. The operation is frequently performed without due consideration, and the statistics of the operation are peculiarly unreliable."

We have few reliable statistics with reference to the performance of pelvic operations for the relief of insanity. In these days, when operations are talked about in every house and almost on every corner, cases of ovarian monomania are likely to be met, cases in which women are determined to be operated upon whether or not; some of these cases are undoubtedly like those of sexual hypochondria or monomania in man, in some of which self-castration is performed. In the wards of the Insane Department of the Philadelphia Hospital is now a patient who has removed both testicles by successive operations, under the influence of such a monomania. Operation upon the ovaries or tubes, or both, in cases of insanity should be restricted to those cases in which either local disease of long standing can be made out, or in which

the outbreak of insanity can be clearly traced to disease or impaired function of these organs.

DR. KELLY said that the cases cited by Dr. Sinkler and Dr. Mills had a direct bearing upon his remarks, and show how important it is that the gynecologist should frequently seek the counsel of the neurologist. Extensive follicular degeneration of the ovaries never *per se*, requires operation, but this is often made necessary by the associated symptoms. All his cases have been benefited; while several continue to suffer from pelvic pain, they are entirely freed from the menstrual exacerbations; most have been raised up from chronic invalidism to perfect health, one attaining this not earlier than a year after the operation. In a case of epilepsy with most marked menstrual exacerbations and severe ovarian pain, the epileptic attacks continue, but she is free from pain, and Dr. Kerlin, under whose charge she now is, considers her improved.

DR. W. W. KEEN reported a

SUCCESSFUL CYSTOTOMY AFTER FAILURE OF SUCTION TO REMOVE A PIECE OF A CATHETER FROM THE BLADDER.

The recent suggestion of Dr. De Forest Willard (THE MEDICAL NEWS, November 26, 1887) and Reginald Harrison (*Lancet*, Oct. 29, 1887), to extract foreign bodies from the bladder by the rubber bulb and evacuator of Bigelow's litholapaxy instrument, makes a valuable addition to our surgical resources in these troublesome cases, and is his especial reason for bringing to your attention the following case. The failure of the method in this particular instance was due to special reasons.

J. W., a healthy man, aged seventy-five years, living in Elkton, Md., had suffered for a considerable time with recurring retention of urine, and cystitis following an enlarged prostate. Dr. Charles M. Ellis, his attending surgeon, very wisely taught him the use of the catheter, which he has employed daily for some months. The Nélaton catheter (No. 22 French), which he has employed, having lost its rigidity, he whittled a pine stick to the necessary size, and sought, by means of this, to introduce it into the bladder, November 7, 1887. In the attempt the catheter broke, and a piece, subsequently ascertained to be 4½ inches long, broke off and passed into the bladder. Severe pain and retention followed immediately, and persisted until after he operated upon him.

Three days after the accident he made repeated unsuccessful efforts at extraction with forceps and lithotrites but was not even able to detect the fragment.

On November 11th and 13th he attempted to remove it by suction with Bigelow's evacuator. On the last occasion Dr. Willard kindly helped him personally. They repeatedly filled the bladder with warm boiled water, being careful to keep the extremity of the evacuating tube just at the vesical extremity of the urethra, but suction had no effect in engaging the fragment. This was amply explained later by finding that it lay crosswise, and was so long that both ends were held fixed by the walls of the bladder, while the relative rigidity of the short fragment prevented any possibility of its being brought to the opening of the evacuating tube, though they sought for it through the tube by Dr. Willard's forceps. An evacuating tube with a lateral eye gave no better results than one with an opening at the end. He also used a rectal bulb filled with seven ounces of warm water, but all to no purpose.

After debating between suprapubic and lateral cystotomy, he decided upon the latter, in consequence of the observation of Harrison and others, that the prostate sometimes shrinks after perineal cystotomy, when a tube is retained in place for some time. Accordingly he did left lateral cystotomy with a staff. With the ordinary lithotomy forceps he easily seized the fragment by the middle, removed it, and introduced a rubber drainage tube with a flange, by which it was easily retained in place by tapes. The patient's temperature never rose above 99°, and in six days he went home, with instructions to retain the tube in place for two months, and then to remove it and allow the opening to heal. By this means he hoped to be able to avoid the necessity for the subsequent daily use of the catheter.

December 5th, after nearly five weeks retention of the drainage tube in the bladder he found that, owing to his feebleness, want of care and cleanliness, the tube was proving a source of irritation and slight suppuration. Accordingly, December 10th, he removed the tube. In three days the wound closed sufficiently to cause him to void his urine by the urethra, and he was no longer obliged to rise at night to relieve the bladder. The prostate has shrunk to some extent, so that he no longer needs to use a catheter. Whether this will be permanent, or is only temporary, time alone will determine.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, December 19, 1887.

THE PRESIDENT, JOHN SHRADY, M.D., IN THE CHAIR.

DR. J. LEWIS SMITH read a paper on

PRESENT OPINIONS REGARDING THE PATHOLOGY AND TREATMENT OF DIPHTHERIA.

No disease in modern times, he said, has attracted more attention than diphtheria, since it is highly contagious and very fatal, is permanently established in many of the larger cities in both hemispheres, and occurs every year epidemically in numerous rural localities. The results of the investigations in regard to the etiology of the disease have tended to establish its microbic origin, but the microbe which is the specific principle of diphtheria is not clearly ascertained. Loeffler, one of the most prominent authorities on the subject, found that every diphtheritic patch contained many species of bacteria, which have been cultivated; but, as they have not been isolated, the specific germ of the disease has not been determined. Another microbe, obtained by Loeffler, and described by Klebs in 1883, merits special attention. In some typical cases of diphtheria, it is true, Loeffler has been unable to find the bacillus, but he suggested that it might possibly have died and been eliminated before death of the patient. The bacilli were found in the exudate in thirteen cases of diphtheria, and cultures to the twenty-fifth generation inoculated in guinea-pigs and birds produced a whitish exudation at the point of inoculation. The researches of Loeffler and Cheyne lend support to the views expressed by Wood and Formad in their able report made to the United States Board of Health in 1882, who arrived at the conclusion

that the two organisms *micrococcus opticus* and *micrococcus diphtheriticus* are specifically one, and that "diphtheria is a septic sore throat, or is simply what was called a century ago putrid sore throat, with or without a secondary constitutional septicæmia."

That the bacillus, said Dr. Smith, is, therefore, the causative agent of diphtheria is rendered probable, and that systemic infection by the diphtheritic poison is not produced directly by the entrance of the microbe into the circulation, but by ptomaines which have sprung into existence through the agency of the microbe, is also the opinion of some of the highest authorities in bacteriology. It is seen that the investigations referred to lend support to the theory that diphtheria is primarily a local malady, and that in certain mild cases it never becomes constitutional, or is constitutional in a very feeble degree. Nevertheless, those who believed that diphtheria was previously constitutional based their opinions on facts that lent strong support to their theory, such as the incubation period of six or seven days in certain cases, the early occurrence of nephritis, even in twenty-four hours in malignant cases, and the existence of very severe and often fatal nephritis in certain cases where the disease of the mucous membrane had been so trivial as to be scarcely appreciable. The mooted subject, whether diphtheria is primarily local, or is primarily constitutional with local manifestations, or whether its nature in this respect varies in different instances, must, therefore, be considered as still undetermined.

As to the propagation of diphtheria the statistics of Professor C. W. Earle, of Chicago, showed that the disease is as severe and fatal in salubrious localities in the newly settled and mountainous States and territories of the Northwest, where it happened to be introduced, as in the foul air of large cities; though dampness and decomposing animal and vegetable substances in rural localities, as in cities, increase the prevalence of the disease. His statistics also showed that diphtheria may be communicated long distances by railways, and probably by merchandise, and they demonstrate its extreme contagiousness from person to person. In the cities there is abundant and melancholy proof of the causative relation of foul air, whether arising from the sewers or stagnant filth, to diphtheria, and Dr. Sternberg, in his recent valuable Lomb Prize Essay, had stated the opinion (which seemed to be borne out by observations relating to the etiology of diphtheria), that the diphtheritic germ, once deposited in damp and foul places, is probably propagated independently of the sick. Thus, in New York City prior to 1850, although foul sewers and insanitary conditions existed, there was no diphtheria; but in the decade following 1850 diphtheria was introduced, its germ made its way into the sewers, where in the filth underground it found a nidus for its propagation, and now wherever sewer gas escapes into the domiciles of this city it is laden with the germs of this disease. The amazing vitality and power of propagation of the diphtheritic germ are apparent when we reflect that it has permanently infected the filthy flowing currents of the sewers in every part of a great city, sewers which, in their ramifications, extend hundreds of miles. It is simply by exposure of children to the sewer gas, carrying with it the diphtheritic germ, which emanates from this widely extending underground culture-bed, and to walking cases of diphtheria, so mild that there is little or no complaint of the throat, or impairment of the general health, that the disease is so prevalent. In Dr. Smith's opinion the germ of diphtheria is of such a nature, and quickly becomes so established in a sewered city, that it can never be "stamped out," as cholera or yellow fever may be, by the active measures of health boards or by legislative enactments, although they may do much in the way of protection.

Having referred in detail to the differential diagnosis of diphtheria, and urged the advisability of enforcing the same precautionary measures in all doubtful cases, as in undoubted diphtheritic disease, Dr. Smith spoke of the area of contagiousness in diphtheria. Dr. Lancry, he said, had cited cases to show that this area is small, being limited to a few feet. Dumas stated that in a school the boys and girls in the same hall were separated by an open space a few yards wide. Diphtheria prevailed among the girls, but did not affect the boys. Other instances were also cited showing that the area of contagiousness, like that of scarlet fever, is within narrow limits, and is, therefore, unlike that of pertussis and measles. The latter diseases, when they enter a domicile or asylum usually affect all the unprotected children. Dr. A. V. Meigs, of Philadelphia, in his interesting paper published last year, on the mode of propagation of the common infectious diseases of childhood, placed diphtheria with scarlet fever and typhoid fever in one group. Diseases in this group, he said, seem to be more under endemic or local influence than are measles and pertussis; not spreading over wide communities, like the latter, and hence, by strict quarantine and preventive measures, their wide extension is more easily prevented. Those who have carefully studied the infectious diseases in children's institutions and elsewhere, will recognize the truthfulness of this distinction.

In speaking of the preventive treatment of diphtheria, Dr. Smith said that Dumas had recommended iodine as a prophylactic; giving to exposed children, in the course of twenty-four hours, a four ounce mixture, containing 8 drops of tincture of iodine and 10 centigrammes (1.34 grains) of iodide of potassium. The most effective method of preventing diphtheria, however, is the isolation and disinfection of the patients, and the disinfection of the apartments, in addition to preventing the inhalation of noxious gases wherever an outbreak of the disease has occurred. Dr. H. B. Baker, of Lansing, Michigan, has published statistics showing that in 102 attacks of diphtheria, the average number of cases where disinfection and isolation (either one or both) were neglected, was 16, and the average of deaths 3.23; while in 116 outbreaks, in which isolation and disinfection were enforced, the average number of cases per outbreak was 2.86, and of deaths 0.66. These precautionary measures, therefore, prevented 13 cases and 2.57 deaths for each outbreak; or, in the total, 1545 cases and 298 deaths in the year. Dr. Smith alluded incidentally to the possible communication of diphtheria to man from animals, stating that recent investigations go to show that it may be thus communicated from poultry, and especially from pigeons; while birds, both wild and tame, are subject to the disease.

Treatment.—The proper treatment of diphtheria is far from being determined, and a chief reason why there is such a difference of opinion in regard to the value of remedies, is because the disease varies greatly in severity in different localities and at different times. In some epidemics a larger majority recover, whatever the treat-

ment (and even with injurious treatment), while in others a large proportion perish under the best possible remedial measures; so that statistics are misleading as to the value of therapeutic agents. In the year 1882 Dr. Lunin met with the following results from different remedies employed at the hospital of Oldenberg. In the fibrinous form of the disease, the percentage of deaths under the various modes of treatment was as follows:

By turpentine	8.30 per cent.
" resorcin	20.06 "
" bichloride of mercury	30.20 "
" chinoline	31.60 "
" tincture of chloride of iron	32.60 "
" bromine	46.70 "

In the septic form the deaths were as follows:

By tincture of chloride of iron	76.5 per cent.
" turpentine	81.0 "
" bromine	88.9 "
" resorcin	89.5 "
" bichloride of mercury	92.9 "
" chinoline	100.0 "

According to Lunin's observations, therefore, in the fibrinous form, turpentine was the most useful therapeutic agent; but in the phlegmonous and septic form the chloride of iron was the most efficient. The cases of fibrinous diphtheria numbered 142, with 43 deaths; of the phlegmonous and septic form, 122 cases, with 103 deaths. In all the cases treated in the Oldenberg Hospital, aggregating 296, 164 were fatal.

After having spoken of the value of tincture of chloride of iron, as advocated by various writers, Dr. Smith took up the consideration of bichloride of mercury, which he said is at the present time regarded by many physicians as the most efficient agent in the treatment of diphtheria. It is the most active and certain of the germicides employed in medicine, whether used locally or internally, and its use in diphtheria rests upon the fact that it quickly destroys all microörganisms with which it comes in contact, and upon the supposition that in safe medicinal doses it penetrates all parts of the system. Among the other authorities quoted concerning its use was Welcher, who recommended as a gargle or spray a solution of the bichloride, one part to one thousand. It was evident, however, Dr. Smith thought, from the experience of other physicians, that when this agent is employed as a spray in so strong a solution as this, it should be used with very great caution; and this is all the more necessary, of course, when the remedy is at the same time being given internally. Dr. E. N. Oatman, of Nyack, N. Y., had reported that he lost but one patient in twenty-three by the following local treatment: Cotton is firmly wound around the end of a stick about the size of an ordinary lead-pencil; being drawn out as it is wound, and made to project beyond the end. This is dipped into a solution of bichloride of mercury, two grains to the pint (1 : 3840), and "passed into the throat until it touches the posterior wall of the pharynx. It is then instantly withdrawn and burnt." This treatment is repeated hourly, with a new swab each time, until the inflammation begins to subside—usually in forty-eight hours. Dr. Smith thought that the quantity of bichloride which could be safely given in twenty-four hours to children of various ages, is about as follows:

To a child 2 years old.	1/6 grain.
" " 4 "	1/4 "
" " 6 "	1/3 "
" " 10 "	1/2 "

Turpentine has been highly recommended recently by physicians of experience for its prompt action, when used locally as well as internally, in arresting the formation and extension of the pseudo-membrane, and as an antidote to the diphtheritic virus. Dr. Lewentaner had reported that an infant of two years, treated by other remedies, began to have symptoms indicating invasion of the larynx on the fourth day. Tracheotomy was resolved upon; but previous trial was made of pure turpentine in a teaspoonful dose. The result was that the croupiness ceased, the other symptoms improved, and the child recovered without tracheotomy. Delthil, by the alleged success of his fumigation treatment, appeared to be the first to draw attention to the use of turpentine in this disease. His treatment was as follows: A mixture of one kilogramme (2 pounds) of coal tar, 8 tablespoonfuls of turpentine, 8 grammes (2 drachms) of resin of benzoin, and 100 grammes (3½ ounces) of cajaput oil; or a mixture of 200 grammes (7 ounces) of coal tar, 80 grammes (2 ozs. 6 drs.) of turpentine; or, turpentine alone, was constantly burnt in the sick-room. The vapor arising from the burning mixture was tolerated by the patient, and did not give rise to vomiting; while it appeared to aid in arresting the diphtheritic process. Schenke modified Delthil's treatment as follows: A mixture was prepared of 200 grammes (6 ounces) of coal tar and 80 grammes (2 ozs. 6 drs.) of turpentine; and of this 50 grammes (1½ ounce) were vaporized at the bedside four or five times a day, each use of the vapor occupying half an hour. His observations led him to believe that the benefit from this treatment accrued chiefly from the turpentine, and largely from its general effect upon the system. He therefore employed turpentine internally in doses of ten minims to one teaspoonful, given from one to three times daily in milk, sugar, water, or gruel. At the same time he employed it as a spray. He also used alcoholic stimulation; and of 36 cases treated by the turpentine, 31 recovered. Rose, of Hamburg, treated 58 cases of diphtheria with turpentine, with the result of 95 per cent. of recoveries. He gave it three times a day in teaspoonful doses, mixed with spirits of ether (ether, 1 part; alcohol, 3 parts), and also gave a teaspoonful of a two per cent. solution of salicylate of sodium every two hours. He used the turpentine cautiously in anæmic cases and in cases with full heart action. Sigel stated that turpentine, in teaspoonful doses, reduced the temperature in 47 cases, in 14 of which the symptoms were so severe that the question of tracheotomy arose, but was postponed by the beneficial effect of the turpentine. Of the whole number of cases treated by him with turpentine, 87, death occurred in 14.9 per cent., while in those treated by bichloride of mercury, salicylic acid, potassium chlorate, etc., 32.5 per cent. died.

Sodium benzoate is another agent that has attracted considerable attention. Blandel had reported two hundred consecutive cases treated with it, without the loss of a single patient. He gave every hour a teaspoonful of a solution containing fifteen grains of the benzoate to the ounce, together with one-sixth of a grain of sulphide of calcium in solution or granule; and the throat was sponged every half hour with a ten per cent. solution of

the benzoate. At the same time the room was kept constantly filled with steam from a vessel containing carbolic acid, turpentine, and oil of eucalyptus. Dr. I. N. Love recommended the sodium benzoate in five, ten, or fifteen grain doses, and, given in syrup and cinnamon water, the solution was not unpleasant. Letzerich, Graham, Brown, and Sanné, from experiments made on animals, considered this agent as a specific against the virus of diphtheria; while Dumas, who had not derived benefit from it in the actual treatment of the disease, proposed, as had been mentioned, that it should be utilized as a precaution.

Renou had considerable success with the following method of treatment: To water constantly boiling a teaspoonful of an alcoholic solution of carbolic acid, salicylic acid, and benzoic acid is now and then added; so that in twenty-four hours 10 drachms (40 grammes) of carbolic acid, 2 drachms (8 grammes) of salicylic acid, and 4 drachms (16 grammes) of benzoic acid are employed. The quantity may be increased if the size of the room, the age of the patient, or the severity of the attack seem to require it. No local treatment, apart from the inhalation, is resorted to; but constitutional treatment and sustaining measures are employed to the fullest extent. Barbet had used Renou's treatment for three years with much success. In 51 cases thus treated 48 recovered. His method is to place on a petroleum stove an earthen pot full of boiling water, into which is put a tablespoonful of Renou's liquid every two hours for adults, and every three hours for children between the ages of one and ten years.

Dr. Smith spoke in strong condemnation of the use of pilocarpine (which had been highly lauded by some authorities), on account of the disastrous results liable to be produced by it. He said he had seen it cause symptoms resembling those in extreme œdema of the lungs.

In speaking of calomel he quoted the favorable opinions expressed by Drs. George B. Fowler, William H. Daly. H. C. Wood, and others, regarding it; but said that the experience of most physicians in New York who had tried it had been unsatisfactory.

Having referred briefly to the treatment by quinine, and by copaiba and cubebs, he passed on to chlorate of potassium, and having presented the views of various authorities in regard to it, gave the following prescription which has been long and favorably known in New York, and is probably more frequently written, with more variations in its properties, than any other in diphtheria.

℞.—Tinct. ferri chlor.	f℥ij–iij.
Potass. chlorat.	℥j.
Acid. muriat. dilut.	gtt. x.
Syr. simplicis	f℥iv.

Dose, one teaspoonful every one or two hours. The tendency, however, has been in late years to diminish the amount of potassium chlorate, or to omit it altogether, from its known irritating action on the kidneys, which are so prone to inflammation in this disease; and he thought it should probably always be omitted if albumen appeared in the urine.

Dr. Smith mentioned, in passing, the use of bromine and of permanganate of potassium, and the styptic treatment by the local application of Monsel's solution, and then spoke of papayotin in diphtheria. Rossbach had used this agent in a solution of the strength of one to twenty frequently applied to the fauces. In very young children a few minims might be placed on the tongue every five minutes. Dr. A. Jacobi stated that papayotin digests a thousand or two thousand parts (according to others, two hundred parts) of moistened fibrin, while not injurious to the mucous membrane. Dr. Jacobi had at one time lost confidence in its efficiency, but afterward had reason to believe that the specimen employed was impure. More recently he had found the drug to act well, and stated that diphtheritic membranes are dissolved in a few hours, in a few cases after a day only. He employed a mixture of one part of papayotin, two parts of glycerine, and two parts of water.

Dr. Smith spoke favorably also of the solvent action of trypsin, which, like that of lime water (by itself of very feeble solvent power), is increased by being used in conjunction with an alkali. He suggested the following formula for a spray:

℞.—Sodii benzoat.	℥j–ij.
Sodii bicarb.	℥ij–iij.
Trypsin	℥j.
Ol. eucalypti	f℥j.
Liq. calcis	Oj.—M.

DR. C. A. LEALE said that after intubation of the larynx, as well as tracheotomy, one great cause of trouble complained of by operators is the difficulty of feeding the patient. To obviate this drawback he had been in the habit of resorting to a very simple and yet very efficient method of introducing food, which he thought ought to be more generally known. This was by means of a Tiemann flexible rubber, velvet-eyed catheter, No. 8, which can readily be passed through the nose and then down the œsophagus into the stomach even when the tube is in position. Thus, with an ordinary syringe liquid food of any variety can be injected through it at will. This device can also be employed during unconsciousness, in convulsions, etc., and on account of its simplicity and easy application it is desirable that it should be understood by all.

DR. FREDERIC S. DENNIS then read a paper on

SELECTED CASES OF SARCOMA IN BONE, WITH PRESENTATION OF SPECIMENS AND MICROSCOPICAL SECTIONS.

(See page 29.)

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Semi-annual Conversational Meeting.

THE PRESIDENT, F. P. HENRY, M.D., IN THE CHAIR.

DR. W. T. COUNCILMAN, of Baltimore, delivered an address on

SOME FURTHER INVESTIGATIONS ON THE MALARIAL GERM OF LAVARAN.

This organism, first described by Lavaran, has been met with in every case of malarial fever which the speaker has seen. The organism is in high degree polymorphous, and ten tolerably distinct forms may be found in the blood. Some of these evidently represent different stages of development, and the connection between them is obvious. Others present such marked differences in form, that no connection between them can be made out. Some of the forms are only found outside of the red corpuscles, and others are found free in the blood.

The forms described are: 1, non-pigmented, small, amœba-like bodies inside the red corpuscles; 2, pigmented bodies, larger than No. 1, also in the red corpuscles; 3, pigmented bodies about the size of red corpuscles; 4, segmenting forms of the No. 3 body; 5, small hyaline bodies, which are formed by this segmentation; 6, a crescent-shaped body with pigment in the centre, the horns of the crescent being often connected by a fine line; 7, round or oval bodies, which differ from No. 6 in shape only; 8, a pigmented body provided with numerous long, actively moving flagellæ; 9, actively moving free flagellæ, which are evidently derived from No. 8; 10, a pigmented body with an active undulatory movement of its periphery. The first five forms are found only in intermittent fever, No. 4 only being seen in the blood during the chill period, and its presence is invariably connected with the chill. Nos. 6 and 7 are found in cases of malarial cachexia.

The most interesting forms, and about whose parasitic nature there can be no doubt, are the bodies Nos. 8 and 9. These are generally absent in blood taken from the finger, but they may be found in any type of the disease. They are the only forms of the organism whose presence in the blood is not associated with a special type of the disease. They were found, however, in 15 out of the 20 cases in which the blood of the spleen was examined. Of these 20 cases, 12 were cases of malarial cachexia and 8 of intermittent fever. In the 12 they were found ten times, and in the 8 cases of intermittent five times. From this it seems probable that Lavaran was right in considering the flagellate organism the most important form of the parasite.

The influence of quinine on the intracorpuscular forms of the parasite is most marked. Doses of 15 grains t. i. d. for two days in succession were found sufficient to cause them to disappear. The effects of the quinine were not so apparent in the other forms. The crescents were apparently not diminished in number in one individual after he had taken 45 grains of quinine daily for seven days, and 60 grains daily for four days.

DR. WM. OSLER said the thought which had struck him most forcibly, in looking over this subject, was the almost perfect unanimity which has prevailed among the different observers as to the appearance of these organisms. With the sole exception of the segmented form (No. 4), Lavaran and the early observers had described them all. His own observations, since the communication he had presented to the Society last year, had been somewhat limited. He had, however, made a series of observations upon the blood of fishes and birds, since it had been stated that bodies resembling Nos. 1, 2, and 3 had been found in the blood of carp and some waterfowl. Prof. Baird had offered him facilities for this work at Wood's Holl, and had kindly furnished him with forty-five carp. He had failed to detect any such organisms in the blood of these. In the blood of a goose sent him from Ontario he had found one or two pigmented bodies. It had been stated by Dr. McCallum, who sent him the goose, that the bird had malaria. However, the bodies were not numerous, nor was the temperature of the goose elevated; nor, so far as he could make out, had it chills.

Dr. Councilman had not figured one body which is very peculiar indeed, namely a solid body in the centre of a clear space. It stains like a microörganism, varies in size, and, although the body itself does not change in form, yet there are sometimes changes in outline in the clear space surrounding it—they were somewhat abundant in one case only. One other point with regard to the clear bodies (No. 1), in five or six instances he had seen such bodies pass out from the corpuscle, remaining out and undergoing no further change of form. He was not altogether prepared to say what is the relationship of these bodies to the other bodies described. It has been claimed that similar changes can be obtained by special methods of staining the blood. The most important question is first to determine the relationship of the hyaline to the pigmented bodies, and the possibility that the hyaline may not be directly associated with them.

He was convinced that the pigmented and segmented bodies are merely different stages. He could fully confirm what Dr. Councilman said with regard to the crescents. They are most peculiar and interesting bodies, occurring in the chronic cases and in those in which there had been no chills. Three weeks ago he had lectured on a case as one of mild typhoid fever; it had lasted eight or ten days with constant fever, up in the evening, down in the morning, slight enlargement of the spleen, no spots. His resident examined the blood and found what he thought were crescents. The case got rapidly better, left the hospital, and returned in a few days with a distinct chill, with crescents in the blood and a well-marked remittent fever. The motile forms he had not seen nearly so frequently as Dr. Councilman; though he had not examined the blood from the spleen they had been present in eight or ten cases. Nor had he seen free filaments nearly so often; when he wrote his paper he had not seen them at all. Since then he had watched the process of separation. It is out of the question to suppose that the crescents or motile forms can come from degenerations in the stroma of the corpuscle, but that the hyaline forms result from such changes is not altogether improbable, and further investigations are necessary to determine this point.

DR. J. P. C. GRIFFITH called attention to the diagnostic value of these organisms, and instanced a case, where from the indefinite history and symptoms, he was unable to make a diagnosis until after an examination of the blood, when a short course of treatment resulted in a cure.

DR. H. C. WOOD said that no one seemed to have made any connection between the crescents and the amœboid forms, they seem to differ in that these are destroyed by quinine, those are not affected. We know that malarial cachexia is cured by quinine, arsenic, and iron. If these remedies have no effect on the crescents, what connection have these bodies with malaria, and what becomes of them, do they eventually disappear?

DR. FORMAD asked whether these organisms are the same as the bodies described by Hütter some twenty years ago.

DR. COUNCILMAN said, in concluding, that Hütter described moving bodies attacking the red corpuscles, existing in all fevers and apparently almost everywhere else. These observations had never been confirmed. The point raised by Dr. Wood had always puzzled him, and for a long time he had tried to reconcile himself to a belief in two distinct diseases, but this he could not do, as always, as the other forms disappear, the crescents appear. He had never seen the crescents unless with a

history of previous chills. He was not altogether prepared to say that quinine had no effect on the crescents, though in several cases he had given it in large doses with no results. Still in some cases they do seem to disappear. He thought with Dr. Osler that the crescents could not be possibly produced by changes in the stroma of the corpuscles, though some of the other forms might.

NEWS ITEMS.

The Annual Meeting of the Kings County Medical Association, Brooklyn, N. Y., was held January 3d. The election of officers took place with the following result:

President.—E. R. Squibb, M.D.

Vice-President.—T. M. Rochester, M.D.

Secretaries.—R. M. Wyckoff, M.D., and J. A. Jenkins, M.D.

Treasurer.—J. R. Vanderveer, M.D.

Two papers by Drs. McCollum and Rochester were read upon "Fever," and the debate was closed by Dr. Austin Flint, of New York City, who was present by invitation. The attendance was large.

Alumni Association of the Woman's Hospital in the State of New York, held its third annual meeting at the New York Academy of Medicine, January 13, 1888.

Appointment.—Dr. Charles H. May has been appointed Visiting Ophthalmic and Aural Surgeon to the Randall's Island Hospital, New York.

The Cremation of Hospital Garbage.—If the Chicago city crematory for garbage proves successful, Cook County Hospital will erect a similar one for hospital use.

The Spontaneous Explosion of Chlorate of Potassium burst the jar containing it, and set fire recently to a chemist's shop in Barnstaple, England.

The First Recorded Case, in America, of Fatal Œdema of the Larynx, was that of General Washington, who was treated in accordance with the antiphlogistic methods of his time. No local treatment, beyond the inhalation of the vapor of vinegar and water, was employed.

Dr. Asa Gray, the eminent botanist of Harvard University, has recently suffered an attack of apoplexy. He is aged seventy-seven.

A Statue to Von Langenbeck.—At a recent session of the Berlin Medical Society the proposal to erect a statue to the late Professor was favorably discussed, and it was determined to enlist the coöperation of the Congress of German Surgeons, to meet in the coming spring.

Honors to Professors Senator and Hahn, at Berlin.—These well-known members of the Berlin faculty have been given the additional titles of Confidential or Court Advisers, a recognition by the government of their distinguished services.

A Banquet to Péan.—To celebrate his election to the Paris Academy of Medicine, a banquet was recently given to this distinguished surgeon, at which the leading surgeons of Paris congratulated him on his continued success.

Recent Statistics from the Pasteur Institute, Paris.—During the month of October, 1887, 144 persons were treated at the Pasteur Institute, in Paris.

Of these 69 had been bitten by animals proven to be rabid; 96 were bitten by animals said by veterinarians to be rabid; 16 were bitten by suspected animals. Of these patients one has died from hydrophobia; one from another cause.—*Le Bulletin Médical.*

A Physician Convicted of Murder.—Dr. Philip Cross, a retired Surgeon-major, and a licentiate of the Royal College of Surgeons, Ireland, was recently convicted of the murder of his wife, by the administration of arsenic.

Diphtheria in a Dissecting-room.—Some little excitement has been caused in Lyons by the death of a medical student from diphtheria, which, according to the newspapers, he contracted from a subject he had been engaged in dissecting. To this assertion the dean of the faculty wrote a distinct denial, stating that the bodies of patients dead of diphtheria are never sent to the dissecting-room. This, however, did not satisfy everybody, for a rejoinder appeared, signed "A group of *externes*," declaring that the child whose body had been dissected had died of croup. According to *La Province Médicale*, the cause of death was meningitis. Though the practitioner who sent the case to the hospital had diagnosed it as one of diphtheria, the house physician had been unable to find any evidence of diphtheria, and the little patient died the same night that it was admitted. Even if the child had had diphtheria, *La Province Médicale* thinks it is extremely doubtful whether the theory of infection could be maintained, for it is not by any means certain that dead diphtheritic membrane can convey infection, especially after the lapse of eight or nine days, which was the period that had intervened between death and dissection. In addition to this, the unfortunate student had not touched the thorax or throat, having been engaged merely with the brain.—*Lancet*, December 17, 1887.

A French Prize of $2000 has been divided among four Paris physicians for essays upon the "Treatment of Strictures of the Urethra." The essays presented were of such equal merit that no one could be selected for the entire sum.

Lead Poisoning in Modern Industries.—GAUTIER has recently presented to the Paris Council of Public Hygiene a report upon cases of lead poisoning in the Department of the Seine. He has reported at intervals of three years; and for 1884–86 he finds a yearly average of 239 cases, which is a diminution of nearly fifty per cent. as compared with the three years preceding. He ascribes this change to hygienic measures enforced in manufactories, and especially to the discontinuing of the use of a brand of white lead, known as "Clichy white lead," which had proven very disastrous to a number of workingmen. The mortality is greatest among painters, and all who have to do with colors, 19 deaths among 481 cases having occurred in three years. This is caused by the persistent use of lead "whites" when zinc salts could be substituted. Gautier hopes to bring about Government control of this

matter which will oblige manufacturers and railways to abstain from handling lead colors unless mixed with oil, powdered white lead being especially dangerous.

Surburban Hospitals for Contagious Diseases.—Four large hospitals are projected in the vicinity of Paris, two for patients suffering from variola, one for diphtheritics, and one for patients with measles.

The Secularization of Paris Hospitals.—By a recent decision of the Council of Public Assistance the Charité will be deprived of its Sisters of Charity during January, 1888, and their places will be filled by non-religious nurses. The Saint-Louis and l'Hôtel-Dieu will be then the only hospitals in Paris still in charge of Sisters of Charity.

The Advantages of the Inspection of Plumbing by Health Departments.—The *Sanitary Engineer* of December 3, 1887, reports eleven instances of the arrest and conviction of plumbers by the New York Health Department, for defective plumbing. In many instances joints were found stuffed with oakum, or plastered over with a mere film of lead, when these joints were in localities not readily accessible. These arrests and convictions occurred within a few weeks, and give an idea of the constant need for the exercise of municipal authority to secure proper hygiene.

The Construction of Theatres.—The *Lancet* of December 17, 1887, considers it a hopeful sign that the Royal Institute of British Architects has devoted an evening to the discussion of the important subject of the construction of theatres. The construction of theatres must be similar in principle to that of all buildings devoted to large public gatherings, and, as the right of public meeting is just now much exercised by the British public, the proper construction of the rooms in which these meetings are held is of paramount importance from the treble point of view of convenience, health, and safety. Mr. Ralph Nevill, who furnished the paper upon which the subsequent discussion was based, seems to have given much thought to his subject, and many of the points upon which he touched were treated with marked ability. As far as the question of convenience is concerned, Mr. Nevill rightly insisted that the triangular form, with the stage at the apex, is the best, as affording an uninterrupted view to each member of the audience. The little matter of placing the seats in the stalls alternately, so that the persons in the back row can see between those in the row in front, is from the point of view of comfort most important. The remarks as to the dangers of long straight staircases were certainly true, and it should be the aim of architects to lessen the length of staircases as much as possible. It is probable that in case of panic from fire there is less danger in ascending an easy gradient than in descending. The importance of this point is very great, but we do not notice that Mr. Nevill touched upon it in the course of his paper. We are glad to see that Mr. Nevill recognizes the fact that, although the electric light does not foul the air of the theatre to the same extent as gas, it does not assist in the ventilation as the latter illuminant can be made to do. The admission of fresh air and the outlet of foul air, are, after all, the most important points in the construction of theatres, and we are convinced that the draughts, which are the chief characteristics of the modern theatre, are certainly due to the fact that architects do not attack this point with sufficient courage, and the air not being admitted in sufficient quantity in the right places, it must rush through the wrong ones and thus cause draughts.

Dr. Arthur Farre, F.R.S.—The death of DR. FARRE, Professor of Obstetrics in King's College, Physician-Extraordinary to the Queen, and Physician-Accoucheur to their Royal Highnesses the Princess of Wales, Princess Christian, and the Duchess of Edinburgh, is announced, at the age of seventy-six years. He had held offices of distinction in the Royal College of Physicians, and was the author of a well-known work on *The Anatomy of the Uterus and its Appendages.*

Professor Balfour Stewart, the distinguished English physicist, died recently, aged fifty-nine years. He had been Director of the Kew Observatory, and was awarded the Rumford medal of the Royal Society for his discovery of the law of equality between the absorption and radiative powers of bodies.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 1 TO JANUARY 9, 1888.

CLEARY, P. J., *Major and Surgeon.*—Granted leave of absence for one month.—*S. O. 138, Department of Arizona*, December 25, 1887.

EBERT, R. G., *Captain and Assistant Surgeon.*—Ordered from Custer, Montana, to Fort Pembina, Dakota Territory.—*S. O. 301, A. G. O.*, December 30, 1887.

APPEL, A. H., *Captain and Assistant Surgeon.*—Granted leave of absence for twenty days.—*S. O. 1, Department of Missouri*, January 3, 1888.

EWINGS, C. B., *First Lieutenant and Assistant Surgeon.*—Granted one months leave.—*S. O. 137, Department of Missouri*, December 27, 1887.

BANISTER, WILLIAM B., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Lowell, Arizona, to Fort Wingate, New Mexico.—*S. O. 3, A. G. O.*, January 5, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JANUARY 7, 1888.

MURRAY, R. D., *Surgeon.*—On being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the Service, January 4, 1888.

DEVAN, S. C., *Passed Assistant Surgeon.*—Relieved from duty at Port Townsend, Washington Territory, to assume charge of Sapelo Quarantine, January 5, 1888.

GLENNAN, A. H., *Passed Assistant Surgeon.*—Relieved from duty at Key West, Fla., to assume charge of the service at Port Townsend, Washington Territory, January 5, 1888.

COVINGTON, P. M., *Assistant Surgeon.*—Promoted and appointed Passed Assistant Surgeon from January 20, 1888, January 7, 1888.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

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